The South Carolina Forestry Commission Forest Inventory and Analysis Program: Current Staffing and Proposed Restructuring

Certified Public Manager Project

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Introduction:

The South Carolina Forest Inventory and Analysis (FIA) program is a cooperative program between the USDA Forest Service – Southern Research Station (SRS) and the South Carolina Forestry Commission (SCFC). The FIA program of the USDA Forest Service, which began in 1930, has been in continuous operation with the mission to: "…make and keep current a comprehensive inventory and analysis of the present and prospective conditions of and requirements for the renewable resources of the forest and rangelands of the U.S." The program collects, analyzes, and reports information on the status and trends of the nation's and states forest resource. FIA data answers such questions as how many acres of forest exist, where it is located, who owns it, and how it is changing over time. FIA data also answers questions regarding forest health. In addition, FIA data is used to determine how trees are growing and how much is being removed, harvested for product, or has died (Burkman 2006). The FIA program is a three phased program. Phase 1 of the program is responsible for collecting data, through remote sensing, used in the determination of area estimates and is performed by SRS. Phase 2 of the program is the field data collection portion of FIA that focuses on forest and tree data and occurs on the standard FIA plot 6,000 acre hexagon grid that includes one sample plot for each hexagon. Therefore, each Phase 2 plot represents 6,000 acres. Phase 3 of the program is a subset of the Phase 2 plot grid, with one Phase 3 sample plot per 16 Phase 2 plots or one sample plot per 96,000 acres. Phase 3 data collection focuses on data collected with relation to forest ecosystem function, condition, and health. Phase 3 data is collected during a three month window from June through August each year (Burkman 2005). The SCFC is responsible for collecting Phase 2 and Phase 3 data.

The SCFC, who began it's partnership with the SRS in 1998, is responsible for collecting FIA data on a network of 3,452 permanently established sample locations located spatially across the entire state of South Carolina. Sample plots consist of four independently located subplots in an inverted Y formation. Each subplot is a 24.0 foot radius with a 6.8 foot radius microplot located with in its boundary (Figure 1). Sample plot locations may fall in forested conditions that meet the definition of accessible forest by being at least 10% stocked by trees and that meet size and width requirements of at least 1 acre in size and at least 120 feet wide (USDA Forest Service – Southern Research Station 2007). Sample plot locations may also fall in areas that are intermixed with both forest and nonforest land uses. When accessible forested conditions are encountered all live trees greater than 5.0 inches at Diameter at Breast Height (DBH) are measured on the subplot and trees greater than 1.0 inches to 4.9 inches DBH are measured on the microplot. Sample plot locations may also fall within different forest conditions. When this occurs, within the subplot or microplot boundary, then the boundary of the change in forested condition or land use is mapped where it crosses either the subplot or microplot boundary. Tree measurements are only collected on the part of the sample plot location that meets the requirements of a forested condition and require an in-depth inventory of that forested condition. In addition, ownership data is collected for all sample plot locations with at least one forested condition by either using county tax assessor online databases or visiting the county courthouse in person. In addition, sample plot locations may fall totally within a nonforest land use or in either census water or non-census water. Census water is defined as being either rivers or streams that are more than 200 feet wide or bodies of water that are greater than 4.5 acres in size. Non-census water is defined as bodies of water from 1 to 4.5 acres in size and water courses from 30 feet to 200 feet in width (USDA Forest Service – Southern Research Station 2007).

When sample plot locations fall in an entirely nonforest land use only a minimum set of data is collected. Nonforest data includes basic plot nomenclature (state, county, and plot number), the date visited, current land use, plot GPS coordinates, and the crewmembers that collected the data. In addition, any plot can be deemed nonsampled if the landowner refuses to participate in the program or the plot location is considered a danger to employees. Although nonsampled plots are rare they do exist but must be verified by a supervisor before they can be classified as either denied access or hazardous. Since the previous inventory a total of 9 new plots will either be established or have been established for the first time due to changes in the sample plot location list. New plot are a product of changes in the plot list when the 6,000 acre hexagon grid had empty cells due to changes in the plot list from the previous inventory.

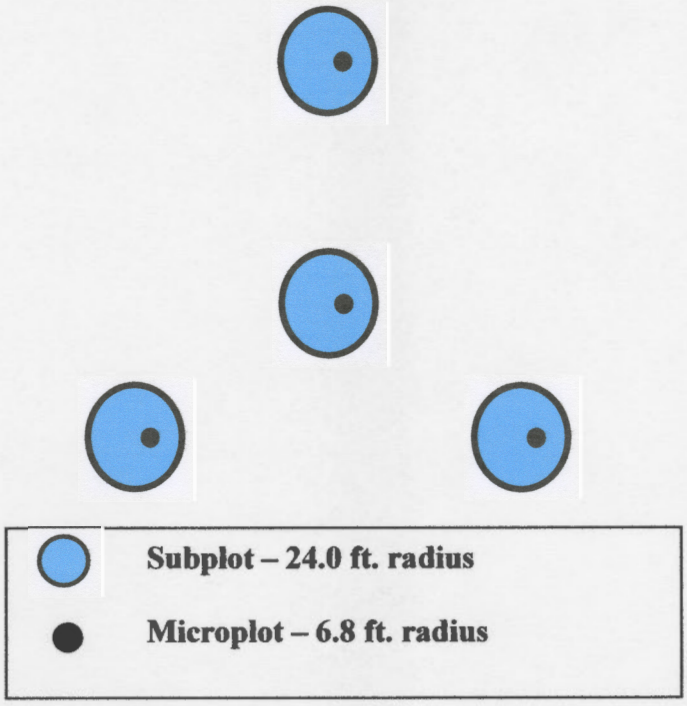
All employees who collect and record FIA data are required by SRS to complete an on the job training period of 6-8 weeks, with an experienced crewmember, and must pass a Certification plot with at minimum score of 80%. If an employee passes their Certification plot they are therefore deemed "certified" by USDA Forest Service standards to collect FIA plot data. During the federal fiscal year each employee must maintain an 87% average on all sample plot locations checked for accuracy by the SRS (USDA Forest Service 2006). The SRS is responsible for all data analysis, compilation, and publications of the data, on the job training, and all quality control and quality assurance of the field data collected.

The SCFC is responsible for collecting FIA field data at a rate of 20% of the total locations each year with the entire inventory being completed in five years. Each yearly 20% is referred to as a Panel with each inventory being a collection of five Panels. Therefore, all sample locations are revisited every five years to account for changes in forest area, forest ownership, land use, tree growth, tree removals, and tree mortality. Sample locations are located

in all forest types, land uses, and ownerships. The SCFC FIA program has completed two complete inventories and has completed two panels of data collection (40%) of the current 10th inventory of the state, making it the first state of the 13 states located in the southern region to do so. The program is not only regionally recognized but is nationally recognized as a leader in the collection of FIA data.

Currently, the SCFC FIA program has four two-person crews located in offices in Spartanburg, Newberry, Florence, and Walterboro. The program is funded 75% by SRS federal grant with 25% matching funds from the SCFC.

Figure 1: Forest Inventory and Analysis Phase 2 and Phase 3 Plot Diagram.



Problem Statement:

Because of the decrease in the number of FIA sample plot locations, rising cost of fuel, agency budget reductions, federal grant reductions, and the length of time to train new employees an evaluation of the current program staffing levels is in order, as well as, the

possibilities of restructuring program staffing. Therefore, the purpose of this project is to evaluate the programs goals and whether or not a restructuring of the program would build efficiencies and improve the program as a whole. Three options were considered: 1) Maintaining the current program staffing; 2) Reducing the program staffing by one crew; and 3) Reducing the program staffing by one crew and adding a field support position to the program. The program is included in the agencies strategic plan with the charge to provide accurate and timely information on the state's forests and health of its forests.

Data Collection:

The data collected for this project were selected to evaluate program staffing, workload, mileage required to travel to and from sample plot locations, program budget, time lost from plot production, and the timeframe needed to properly train new employees. The data collected for this project were selected with the base objectives of the program in mind of collecting 20% of the total number of sample plot locations per year and maintaining the same level of quality and accuracy of the program in its 10 years of operation.

The key goal of collecting workload data was to determine if the program can maintain the same level of data collection production with a reduction in field crew staffing. Data collected to determine the level of workload was a comparison of the past number of sample plot locations from the previous inventory to the current number of sample plot locations and recently built-in efficiencies incorporated by the SRS to the number of sample locations that require field visits. An evaluation of the number of sample plot locations that require field visits, and subsequent data collection, should determine if a reduction in field staff would still be able to maintain the required yearly production of the program.

A comparison of mileage to travel to and return from sample plot locations was performed between the current field staffing and the proposed restructured field staffing. Since fuel costs are a substantial percentage of the required operating funds for the program a comparison of the amount of fuel needed yearly are necessary to estimate the amount of funds needed to support the program. In addition, this data determines the timeframe to replace vehicles used by field crews. To estimate the amount of yearly fuel consumption by the program staff, one Panel of FIA sample plot locations were used to derive an estimated yearly mileage and fuel cost by crew and program as a whole. Since the current four crew locations and staffing have been in place since September 2003 the actual mileage and fuel consumption was averaged for calendar years 2006-2007 which would be two full Panels of data collection and therefore will provide a solid yearly average to base an estimate for the restructuring of the program staff.

Mileage from vehicle log books and monthly fuel reports were used to obtain this data and to assign average miles per gallon to each vehicle. To bring the 2006-2007 years fuel costs to today's dollars an estimate of $2.00 per gallon and a more conservative estimate of $2.50 per gallon of gasoline, due to the recent fluctuations in fuel prices, was used to estimate fuel costs. To estimate the mileage and fuel consumption for the restructuring of the field staff by downsizing to three crews and the proposed downsizing to three crews and adding a field support position, one Panel of plot locations were used. Panel 2 had 507 forest and forest-partial plot locations; the most based on the previous inventory, and were used to provide a starting point for the estimation of mileage and fuel costs. First, counties were assigned to the three crew locations based on the number of locations in each county to distribute the workload evenly. Then sample plot GPS coordinates and the three field crew offices (Newberry, Florence, and Walterboro) were entered into the Garmin® MapSource® mapping software to calculate roundtrip mileage to

each plot location with the software preference settings set to calculate shorter distances and to prefer highways road selections 66% of the time. There are some limitations to using the MapSource® program in that it does not always select the most desirable route and therefore the aforementioned settings were selected with this in mind to take full advantage of the most direct route to plot locations.

A budget comparison was made between the existing FIA staff, reducing the field staff by one crew, and reducing the field staff by one crew and adding a field support staff position. A comparison of the annual fuel costs and estimated fuel costs of a restructured program was performed to establish part of the operating costs to the program. Program salary, fringe benefits, and operating costs were compared for all three levels of staffing.

Available staff days was compared to days where employees were either on leave (sick, annual, or holiday) and time spent collecting sample plot location ownership data. A comparison of 6 FIA employees, each with different levels of experience, years of service, and office locations will be used to obtain an estimate of the number of days lost from data collection by either collecting ownership data or one crewmember is absent because of leave.

Lastly, the length of time it takes a new employee to become "certified" by USDA – Forest Service standards to collect FIA field data were examined. A comparison of the number of weeks/months it takes to train SCFC FIA employees to collect FIA field data to USDA – Forest Service standards. A sample of 24 SCFC FIA employees was used for data analysis. The data does not include the programs initial employees, temporary employees, or employees who had prior FIA experience before being hired by the SCFC. Certification times for 23 US Forest Service SRS FIA employees were used as a comparison.

Data Analysis:

Since the FIA program is a production based job requiring FIA data collection on 20% of the total number of sample plot locations each year, analysis based on the workload is mandatory in determining if a reduction in crew staff is feasible. Production is set at one forest or partial-forest plot per day for each two-person crew. Minimum production is based on 3.5 forested or partial-forested plots per crew per week. The 3.5 plot per week production requirement takes into account lost field time due to leave, weather, training, meetings, and other circumstances that take away from collecting FIA field data. The program is currently in the 10^{th} inventory of the state and changes in the sample plot list have reduced the number of sample locations by 39 plots from the 9^{th} inventory of the state. Additionally, recent efficiencies have been built into the program by SRS that reduces the number of nonforest and water plots that require actual visits and are referred to as autogenerated nonforest plots. From the 9^{th} inventory to the current 10^{th} inventory the number of autogenerated nonforest plots has increased considerably and therefore has reduced the number of plots that require field visits. Since the recent changes in procedures to classify autogenerated nonforest plots, three Panels had to be estimated based on the number of autogenerated nonforest plots that were classified in the recently completed and the upcoming Panel (Table 1).

Table 1: A Comparison of FIA Data Collection Workload from the 9th to the 10th Inventories

Cycle	Forest and Forest-Partial Plots	Nonforest Plots	Nonsampled Plots	New Plots	Total Plots	Autogenerated Nonforest Plots[a]	Total Number of Visit Plots
9	2483	993	15	-	3491	121	3370
10	2476	963	7	6	3452	597	2855

[a] Autogenerated nonforest estimated for Cycle 10 Panels 2, 3, and 4 at 60% of nonforest plots based on the number of autogenerated plots for Panels 5 and 1.

Although nonforest plots require very little time to complete, in comparison to forested or partially forested plots, it still requires travel time, mileage, and additional fuel to visit these locations and therefore reduces time that could be spent collecting data on forest or forest-partial plots and increase mileage to vehicles and fuel consumption. Therefore, if the number of nonforest plots is reduced then more time is available to focus on collecting FIA data on plots that require field measurements. Since plot production is based on the number of forest or forest-partial plots, the main focus is on the number of these types of plots when determining the amount of field staff needed to collect data on one Panel of plots per year. With the minimum production being 3.5 forest or forest-partial plots per crew per week an average of 15 plots per month per crew must be maintained to successfully complete one Panel of data collection per year. The total number of forest and forest-partial plots, based on the classification from the 9th inventory, is 2,476 and adding plots that were classified as nonsampled in the 9th inventory and new plots for the 10th inventory the total number of plots that will require field data collection is 2,489 or an average of 498 plots per Panel. Therefore, 4 crews should finish a Panel in 8.3

months and 3 crews should finish in 11.1 months, respectfully (Table 2). Although drive times to and from sample plot locations will increase, the production rate of 3.5 forest or forest-partial plots are needed to successfully complete one Panel of sample plot data collection per year. Since the data shows that 4 crews potentially have the program overstaffed, based on the amount of workload, and if the incorporated efficiencies of the autogenerated plots remain true there is ample time to complete one Panel of data in a year's time. On the contrary, 3 crews may have the program slightly understaffed. Therefore, if an additional field support staff member was incorporated into the program it opens the potential for that person to fill in when field staff employees are absent or attending training and the Forest Inventory Coordinator is not available to fill in for absentees. In addition, if the program begins to fall short of the required monthly production then the field support employee and the Forest Inventory Coordinator could team up from time to time and collect field data to rectify shortfalls in production.

Table 2: A Comparison of Workload Based on the Number of FIA Crews.

	Average Yearly Plots by Type				
Number of Crews	Total Plots to Visit	Number of Plots Per Panel	Number of Plots a Month Per Crew[a]	Expected Production Per Month	Number of Months to Complete Panel
3	2489	498	15	45	11.1
4	2489	498	15	60	8.3

[a] Number of plots per month per crew are based on 3.5 plots per week per crew calculated over 52 weeks per year.

Since fuel costs account for approximately 30% of the entire FIA operating budget a cost analysis is vital to developing a budget estimate for the program. A comparison of the cost of fuel to support the FIA program is needed to incorporate into the programs budget. A

comparison between the current FIA staff, the downsizing of one FIA crew, and a restructured FIA staff that downsizes the number of crews to three but adds a field support position is made to be able to assign fuel costs to the subsequent budgets of the three different staffing scenarios (Table 3). To estimate the fuel consumption for the added field support position, the average mileage for the Forest Inventory Coordinator was expanded by a factor of 75%. The expansion factor for the field support position is based on an assumption that the field support person would drive approximately 75% more than the Forest Inventory Coordinator currently drives in one year. As seen in the data, as the FIA field staff is reduced the amount of fuel to support it increases. This is expected as a fewer number of crews would have to cover a larger area from their home offices.

In accordance with state law Section 1-11-270: Division of Motor Vehicle Management; establishment of criteria for individuals assignment of motor vehicles, the FIA program vehicles must be parked at the office location since the primary responsibilities of the FIA program and its employees are not of an emergency response capacity, such as wildfire suppression, after normal working hours (South Carolina Code of Laws 2008). To downsize one crew to establish a program staffing of three crews, an estimated increase in fuel costs would total $3,904 with fuel at an estimated rate of $2.00 per gallon and $4,880 at $2.50 per gallon and to establish a field support position to a three crew staff would increase estimated fuel costs by $6,207 at $2.00 per gallon and $7,758 at $2.50 per gallon over the existing staffing structure of the program.

Table 3: Estimated Annual Fuel Cost Comparison Based on Staffing.

LOCATION	AVERAGE YEARLY MILEAGE (2006-2007)	AVERAGE YEARLY FUEL (GALLONS)	CALCULATED MILEAGE TO PLOTS (1 PANEL)a	MILEAGE EXPANSION FACTOR	CALCULATED YEARLY FUEL (GALLONS)	FUEL EXPANSION FACTOR	ESTIMATED YEARLY MILEAGE	ESTIMATED FUEL YEARLY FUEL QUANTITY	FUEL COST PER GALLON	TOTAL at $2.00/Gallon	FUEL COST PER GALLON	TOTAL at $2.50/Gallon
Current Staffing												
Spartanburg	30,116	1,783.24	-	-	-	-	-	-	$2.00	$3,566.48	$2.50	$4,458.10
Newberry	29,886	1,876.70	-	-	-	-	-	-	$2.00	$3,753.40	$2.50	$4,691.75
Florence	29,431	1,870.20	-	-	-	-	-	-	$2.00	$3,740.40	$2.50	$4,675.50
Walterboro	29,715	1,931.02	-	-	-	-	-	-	$2.00	$3,862.04	$2.50	$4,827.55
Coordinator	12,783	657.99	-	-	-	-	-	-	$2.00	$1,315.98	$2.50	$1,644.98
Total	**131,931**	**8,119.15**	-	-	-	-	-	-	$2.00	**$16,238.30**	$2.50	**$20,297.88**
Restructured 3 Crews												
Newberry	29,886	1,876.70	19,221	1.55	1,201.31	1.56	46,469	2,931.80	$2.00	$5,863.60	$2.50	$4,691.75
Florence	29,431	1,870.20	17,618	1.67	1,122.14	1.67	49,165	3,116.94	$2.00	$6,233.89	$2.50	$4,675.50
Walterboro	29,715	1,931.02	17,068	1.74	1,108.34	1.74	51,733	3,364.35	$2.00	$6,728.69	$2.50	$4,827.55
Coordinator	12,783	657.99							$2.00	$1,315.98	$2.50	$1,644.98
Total	**101,815**	**6,335.91**					**147,366**	**10,071.08**	$2.00	**$20,142.16**	$2.50	**$25,177.70**
Restructured 3 Crews and Support												
Newberry	29,886	1,876.70	19,221	1.55	1,201.31	1.56	46,469	2,931.80	$2.00	$5,863.60	$2.50	$7,329.50
Florence	29,431	1,870.20	17,618	1.67	1,122.14	1.67	49,165	3,116.94	$2.00	$6,233.89	$2.50	$7,792.36
Walterboro	29,715	1,931.02	17,068	1.74	1,108.34	1.74	51,733	3,364.35	$2.00	$6,728.69	$2.50	$8,410.86
Columbia (Field Support)b							22,370	1,151.48	$2.00	$2,302.97	$2.50	$2,878.71
Columbia (Coordinator)	12,783	657.99							$2.00	$1,315.98	$2.50	$1,644.98
Total	**101,815**	**657.99**					**182,520**	**11,222.56**	$2.00	**$22,445.13**	$2.50	**$28,056.41**

a Calculated mileage was derived from Garmin MapSource® mapping software for panel with the most field locations. Settings were set for shorter times and 66% of road selection to perfer highways.

b Columbia (Field Support) mileage and fuel was calculated taking Columbia (Coordinator) mileage and expanding by 75%.

A comparison of yearly mileage is also vital in estimating vehicle replacement. Although, vehicle replacement is not an annual cost it is a substantial investment in the program. At the present the FIA program has two of four vehicles that have exceeded the replacement mileage that is set by the South Carolina Budget and Control Board – State Fleet Management of either seven years or 150,000 miles (South Carolina Budget and Control Board – State Fleet

Management 2006). Vehicles in the FIA program will always exceed replacement mileage limits before replacement cycle limits due to the amount of miles that is traveled by each crew each year to perform their FIA data collection duties. The averaged mileage of the existing crew staff for 2006-2007 or the calculated mileage for a reduction in staff to three crews results in an estimated service time until replacement at 5.0 compared to 3.1 years (Table 4).

Table 4: Estimated Timeframe to Replace Crew Vehicles.

Vehicle Location and Type	Average Yearly Mileage	Replacement Cycle (Months)[a]	Replacement Mileage[a]	Number of Years of Expected Service
Existing FIA Staff				
Spartanburg - 4X4 Pickup	30,116	84	150,000	5.0
Newberry - 4X4 Pickup	29,886	84	150,000	5.0
Florence - 4X4 Pickup	29,431	84	150,000	5.1
Walterboro - 4X4 Pickup	29,715	84	150,000	5.0
Average	**29,787**	**84**	**150,000**	**5.0**
Restructured 3 Crews				
Newberry - 4X4 Pickup	46,469	84	150,000	3.2
Florence - 4X4 Pickup	49,165	84	150,000	3.1
Walterboro - 4X4 Pickup	51,733	84	150,000	2.9
Average	**49,122**	**84**	**150,000**	**3.1**

[a] Source: South Carolina Budget and Control Board - State Fleet Management

Replacement of vehicles when they reach the replacement cycle or mileage is not mandatory but become a liability in the form of repairs due to severe driving conditions encountered in accessing plot locations.

The SCFC FIA program is a cooperative agreement between the SCFC and SRS based on 75% of the programs budget supplied by SRS grant funds with a 25% match of state funds. The SCFC has always overmatched the federal grant funding to adhere to the requirements set forth in the Memorandum of Understanding between SCFC and SRS of completing one Panel of data

collection per year and to supply the agency and its customers with timely and accurate data. The set federal grant funds for the program are $331,117. The SCFC FIA program over the past two federal fiscal years has seen a decline in grant funding from 6% in federal fiscal year 2007 to 12% in federal fiscal year 2008 due to the federal budget being under a continuing resolution. Therefore, since it is unknown if a federal budget will be passed or the federal government will continue the continuing resolution budget for federal fiscal year 2009 the 2008 federal grant funding of $291,383 will be used to estimate the programs budget and subsequent matching and additional state funds. Since salary and fringe benefits make up approximately 80% of the budget, analysis of the programs budget is important when looking at what effects staffing have on the ability to fund the program. Analysis is based on the 2009 calendar year and not the state fiscal year. Currently, the program has two vacancies within the current staffing structure. If the current staffing structure remains the same the total calendar year budget is $492,729 of which $201,346 state funds with fuel prices set at $2.00 per gallon or $496,789 total budget with $205,406 needed in state funds with fuel prices at $2.50 per gallon, would be necessary to fund the program at full staffing. If one crew was dissolved and one employee is relocated to fill a recent vacancy in one of the retained crew locations the budget would be $413,080 or $418,116 with $121,697 or $126,733 requiring state funds depending on fuel costs. If the proposed restructuring of staffing to dissolve one crew but add a field support position with existing FIA personnel and increase that individuals salary to $40,000, to compensate for the increase in responsibility and duties, the budget would total $481, 782 or $487,393 and $190,399 or 196,010 would be required from state funds depending on fuel costs. The savings in relation to the existing staffing structure would be $79,649 or $78,673 if one crew is dissolved and $10,947 or

$9,396, depending on the cost of fuel, if one crew is dissolved but replaced with a field support position (Table 5).

Table 5: Estimated Budget Comparison Based on Program Staffing.

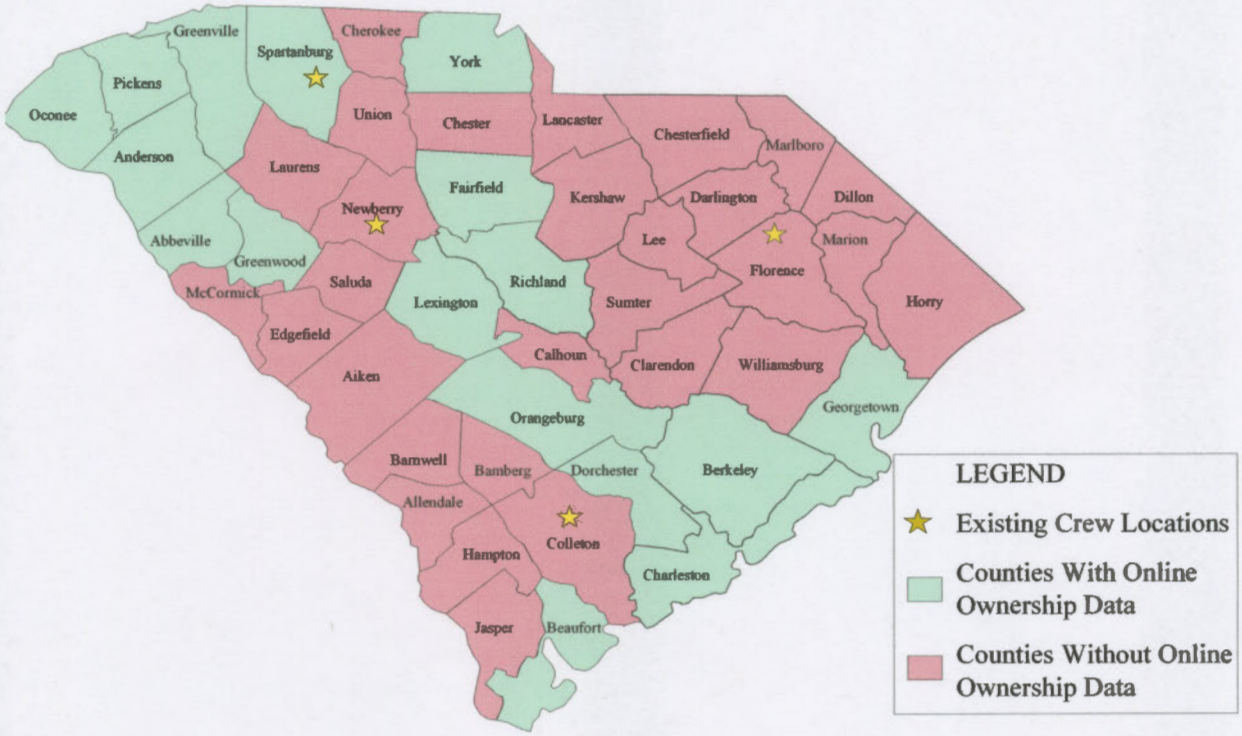
	Existing FIA Staff		Restructured FIA Staff (3 Crews)			Restructured FIA Staff (3 Crews & Field Support)		
Budget Category	State Match	Federal Grant	State Match	Federal Grant	Savings (-) or Increased Cost (+)	State Match	Federal Grant	Savings (-) or Increased Cost (+)
Salary	$123,977	$194,256	$60,935	$194,256	-$63,042	$109,379	$194,256	-$14,598
Fringe	$43,392	$67,989	$21,327	$67,989	-$22,065	$38,282	$67,989	-$5,110
Operating[1]	$33,977	$29,138	$39,435	$29,138	$5,458	$42,738	$29,138	$8,761
Operating[2]	$38,037	$29,138	$44,471	$29,138	$6,434	$48,349	$29,138	
Subtotal[1]	$201,346	$291,383	$121,697	$291,383	-$79,649	$190,399	$291,383	-$10,947
Subtotal[2]	$205,406	$291,383	$126,733	$291,383	-$78,673	$196,010	$291,383	-$9,396
Total Budget[1]	**$492,729**		**$413,080**		**-$79,649**	**$481,782**		**-$10,947**
Total Budget[2]	**$496,789**		**$418,116**		**-$78,673**	**$487,393**		**-$9,396**

[1]Based on fuel costs of $2.00/gallon
[2]Based on fuel costs of $2.50/gallon

Days that are lost when either one or more crewmembers are absent or the crew is collecting sample plot ownership data result in a decrease in plot production. When staffed with a minimum number of field crews, time spent collecting ownership data and days when one crewmember is absent due to annual or sick leave can have a negative affect on production. Currently, only 17 of 46 or 37% of South Carolina Counties have online mapping services where ownership data can be collected through the Internet (Figure 2). Although these counties are not evenly distributed throughout the state, the majority are located in the upper piedmont with far fewer in the southeastern part of the state and only one county located in the Pee Dee Region with online mapping capabilities. Therefore, when these tools are not available it requires crews

to visit county tax assessor offices to acquire ownership data. In addition, if sample plot locations change land use, from the previous inventory, from nonforest to forest in the form of forest reversions then crews are required to return to the tax assessor's office to obtain ownership data. Either initial or return visits to the tax assessor's office is lost time to plot production and can add up throughout the year. The collection of ownership data generally does not take all day but can take more time the less experience a crew has. If possible crews will try to collect plot data the same day depending on the amount of time it takes to collect ownership data. When possible crews will use days of poor weather to collect ownership data so field data collection time is not lost during days of good or applicable weather.

Figure 2: South Carolina Counties with Online Ownership Data.



On days when one crewmember is absent due to sick, annual, or holiday leave, the crew is less productive. Many times the Forest Inventory Coordinator can fill in when crewmembers are absent but this is not always an option depending on his schedule. When he is unavailable

then the crewmember working that day will collect ownership data, assist a bordering crew, or try to find plot locations with minimal amount of data to collect. To assess an estimate of the amount of sick or annual leave an employee takes within a year can be difficult since each employee is at varying years of service, have differences in family life, and may or may not be a native of South Carolina and therefore will take time to visit their hometown. Estimation of the amount of time an employee is absent due to leave can be difficult since each employee may use more annual leave than another and days absent because of sickness or injury cannot be estimated accurately. Therefore, for the purposes of this project, six employees with each varying years of service, experience, and field location was used to estimate a yearly average of days lost to either sick or annual leave. Since the weeks of Christmas and New Years are generally lost to annual leave these weeks were dropped from the data. Therefore, over a period of 50 weeks or 250 work days the amount of time lost to either collecting ownership data or days lost to sick, annual, or holiday leave resulted in an estimated 6 days lost to the collection of ownership data and 20.4 days lost to leave. A total of 26.4 days lost is equivalent to approximately 5 weeks lost from field data collection (Table 6).

Table 6: Lost Staff Days to Ownership or Leave

Employee #	Total Number of Work Days	Ownership	Leave - Annual, Sick, & Holiday	Total Days Lost
198	250	6.5	21	27.5
415	250	4	16	20
403	250	5	28	33
444	250	5	8.5	13.5
449	250	9.5	28	37.5
462	250	6	21	27
Total	**1500**	**36**	**122.5**	**158.5**
Average Days Per Crewperson	**250**	**6**	**20.4**	**26.4**

A key component of the SCFC FIA program is the training of new employees. Since the initial training period is critical in establishing the skills and knowledge needed to collect FIA field data, a look at the timeframe needed to complete initial training was required to evaluate the efficiency of this aspect of the program. The SRS requires that all FIA field staff be certified by their standards and must complete a 6 to 8 week on the job training period under the direction of a certified state or SRS Quality Assurance (QA) personnel before they are qualified to collect FIA field data. At the culmination of the training period each FIA trainee must complete a Certification plot, which is a "mock" plot set up to evaluate an FIA employee's skills and knowledge to collect FIA field data. A minimum score of 80% must be obtained on the Certification plot to receive a passing score. During the year each FIA employee has a minimum of 8% of their plots check cruised by SRS QA staff for accuracy and must maintain a minimum yearly average of 87% (USDA Forest Service – Southern Research Station 2006). The SRS is responsible for all training within the FIA program. However, the SCFC FIA program has

mostly trained new employees with existing certified employees since the program began replacing the initial crew staff as they moved to other employment within the agency or outside of the agency. This approach has work well in the past but as the agency experiences more turnover, through the replacement of retirees, this aspect of the program has suffered in having less experienced personnel to train new employees. In addition, since there is only one SRS FIA QA personnel assigned to South Carolina his time is limited, due to other duties he is required to fulfill. This becomes even more problematic if there is more than one new employee needing training and they are located at different field offices. The SCFC FIA program requires that all employees entering the program are required to commit to two years before they are eligible to apply for other positions within the agency. The commitment does not prohibit employees from leaving the agency to seek outside employment. The purpose of the program commitment is training based, since the amount of time that is invested in each SCFC FIA employee to effectively train them to collect FIA data is lengthy. In addition, the commitment is also used to perpetuate the training of new employees with skilled employees who have field experience and to reduce the dependency on the SRS QA staff. Although, SRS FIA requires a 6-8 week on the job training a more realistic training period is 10-12 weeks based on 10 years of experience with the SCFC FIA program (USDA Forest Service – Southern Research Station 2006). Analysis on the amount of time to successfully train a new SCFC FIA employee consisted of all employees with the exception of the initial crew staff when the program began, two employees who were temporary employees, and two employees who had prior FIA experience. A total of 24 employees were used for analysis on certification times. Of these employees, only 37.5% (9 employees) were successful in becoming certified within the 12 week or 2.8 month training window. Since the replacement of the initial SCFC FIA staff began the average time to certify

new employees has been 3.9 months or 16.7 weeks (Figure 3). In comparison to certification times for federal employees only one employee out of 23 or 4.3% was successfully certified within the 2.8 month training window. The average time to certify federal FIA employees was 4.8 months or 20.6 weeks (Figure 4).

Figure 3: Amount of Time to Certify SCFC FIA Employees.

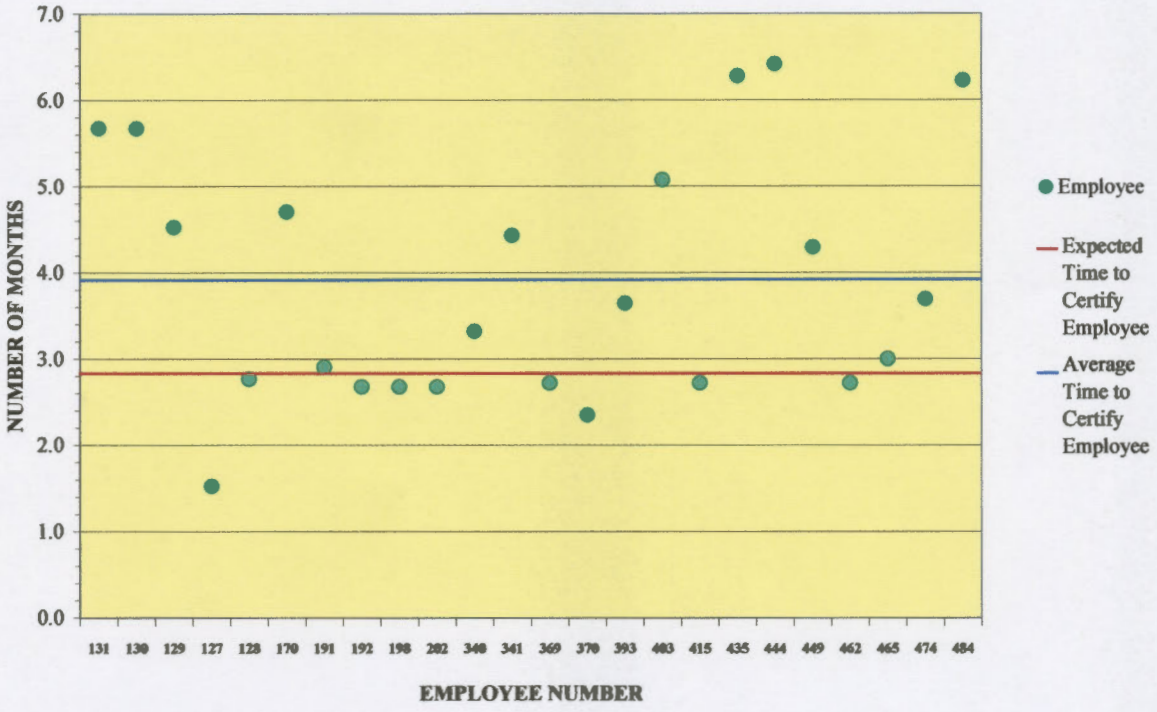
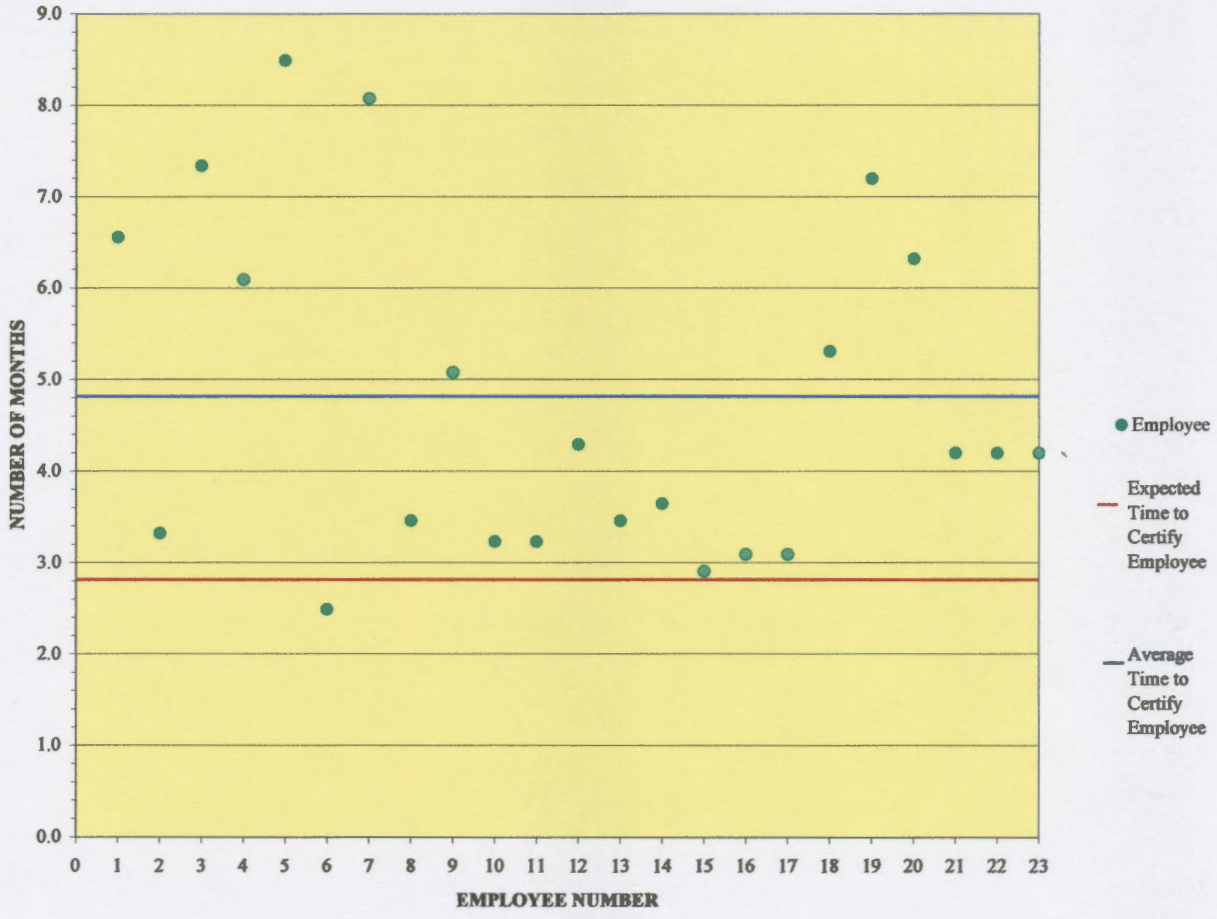


Figure 4: Amount of Time to Certify USFS SRS FIA Employees.



A number of factors can be responsible for employees not becoming certified within the 12 week training period. The SRS FIA QA personnel may not be able to spend the entire 12 week period on a day to day basis because of other job duties they are responsible for, such as, being called out of state to help with QA work in other states, helping states that are behind in production, special projects, or leave. Even if the SRS FIA QA personnel was able to spend the entire 12 week period with the new employee then time is taken away from check cruising and meeting the minimum 8% of checks each year. Other factors can be the SCFC FIA employee that is training is relatively inexperienced and therefore takes more time to relay data collection procedures to new employees and/or the new employee has difficulty interpreting and

understanding the procedures being trained. Although the procedures and concepts can eventually become learned skills the importance of having a trainer with four or more years experience can make the training process timelier. The experienced trainer has observed many different field situations during their career and can use their experiences to better explain encountered situations and discuss hypothetical situations to the trainee for better understanding of field data collection procedures and concepts. Currently, the number of SCFC FIA employees with more than the minimum of two-year's experience is one employee. Up until 2006, the program has always had at least one experienced SCFC FIA employee remaining, on the crew, to fulfill the training needs of the program when an employee left the program. Prior to 2006 the average amount of time to successfully train a new employee was 15.1 weeks. Since 2006 the average time to train a new employee has increased to 19.5 weeks. This data provides support for the need of an experienced FIA employee to supply the training requirements of the program. If an experienced FIA Field Support position was created then that person would be able to train on a day to day basis with new employees and therefore reduce training times. If training was performed by one person then more consistency in the relay of procedures and concept would also be obtained.

Implementation Plan:

To restructure the SCFC FIA program could be a simple as reassigning existing FIA personnel to the vacancies the program currently has open. To restructure the staff from four crews to three crews would be a matter of closing the office in Spartanburg and moving the existing employee to a vacancy in one of the retained SCFC FIA offices where a vacancy exists. The county assignments would then need to be redistributed from the existing county assignments (Figure 5) and be distributed for three crews (Figure 6).

Figure 5: Existing County Assignments for 4 SCFC FIA Field Crews.

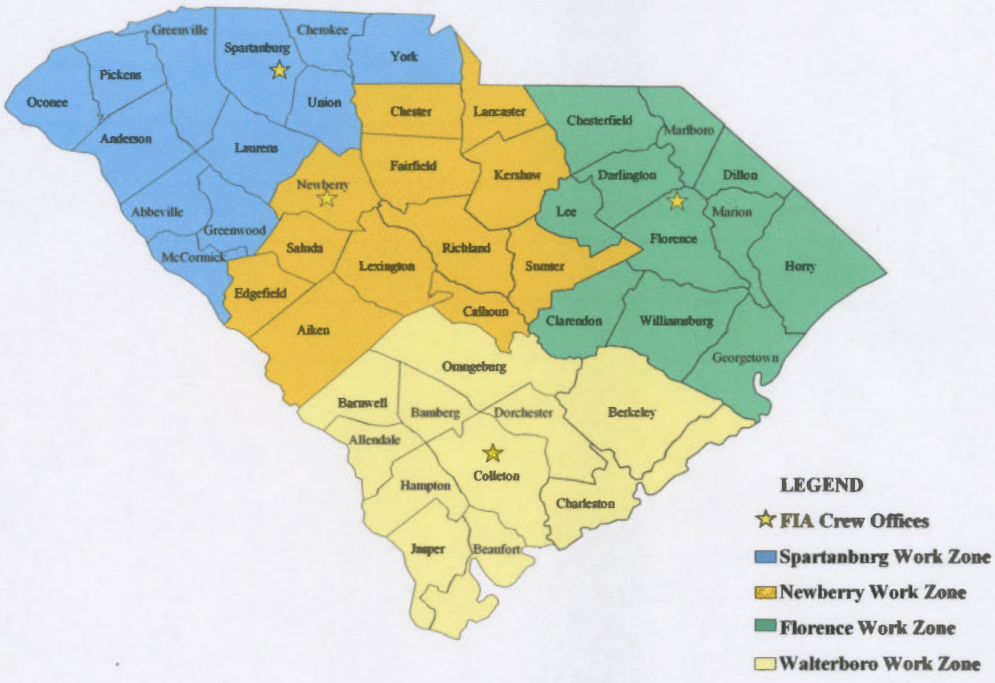
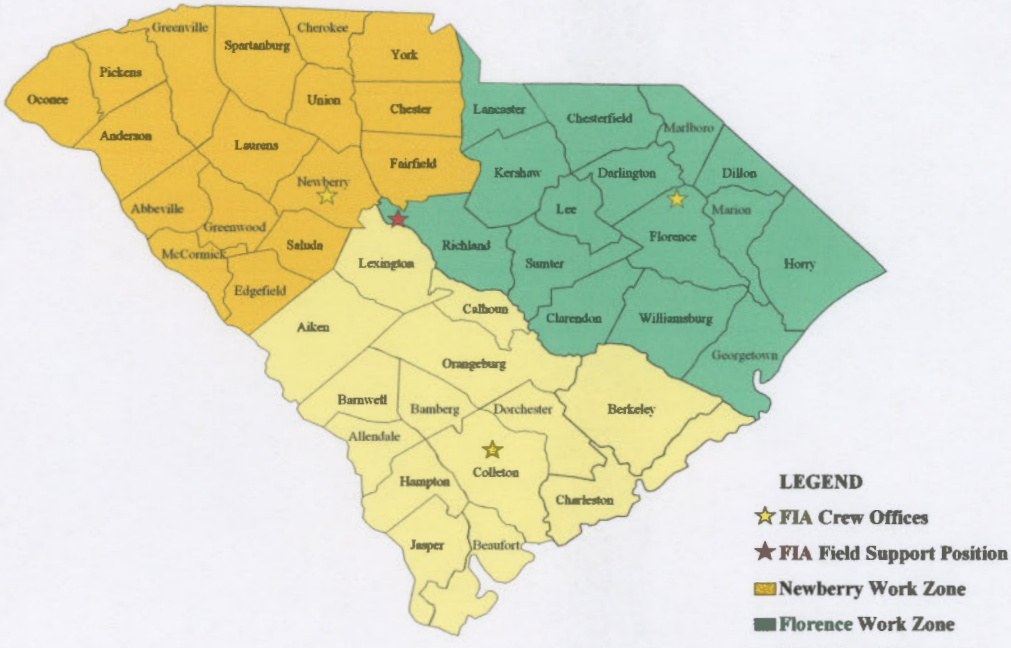


Figure 6: Restructured County Assignments for 3 SCFC FIA Field Crews and Addition of a Field Support Staff Position.



To reconstruct the existing four crews to a three crew staff and add a FIA Field Support position would be to relocate the existing employee in Spartanburg to another program vacancy, redistribute county assignments and promote the most senior member of the SCFC FIA staff to the FIA Field Support position. The relocated employee would have a choice of either the regular SCFC FIA vacancy or the vacancy created by the promotion the employee to the FIA Field Support position. However, this is contingent on the senior SCFC FIA employee being willing to accept the new FIA Field Support position. If the programs senior employee is not interested in the FIA Field Support position then the newly created position would have to be opened up to a public vacancy announcement and the employee in Spartanburg would fill the programs current vacancy in the SCFC FIA office that is retained. There could be a limited number of qualified applicants due to a base requirement of a minimum of four years experience in the FIA program at either the state or federal level. Outside of the aforementioned processes to restructure the existing staff no other actions would be necessary and analysis of costs has already been addressed previously. The timeframe to implement the restructuring could be immediately following approval by the SCFC State Forester and Deputy State Forester.

Evaluation Method:

To evaluate the restructuring of the SCFC FIA program would not change from what is currently being used to evaluate progress of the program. The FIA program is mostly production based and therefore production is figured each week in the form of employees sending in weekly progress reports of the sample plots they have collected during the week. These reports are due the following Monday and are cross-referenced with what plot data has been transmitted electronically to the USFS SRS FIA Headquarters in Knoxville, TN through the SCFC Forest Inventory Coordinator being allowed access to USDA Forest Service Intranet servers and

accounting for each plot by number and type of plot; forest, forest-partial, nonforest, access denied, hazardous, or water. Therefore, the Forest Inventory Coordinator is able to track the progress of the SCFC FIA program on a weekly basis to evaluate the progress of the program in terms of production, move resources into other work zones if necessary, and determine if production is being met to complete one Panel of sample plot data collection per year.

Summary and Recommendations:

According to the data collected for this project it is clear that the SCFC FIA program is slightly overstaffed. However, reducing the crew staffing to three crews is likely to create a situation where the program would be slightly understaffed. Reducing the staffing of the program to three crews would significantly reduce salary and fringe but increase operating costs to the program. Reducing number of crews would reduce the total amount of additional state match funds needed to sustain the program. However, one key problem of just reducing the field staff to three crews would be when vacancies arise. The loss in production would be exponentially increased until a replacement could be obtained by the program being understaffed and therefore would put the program in jeopardy of not being able to complete the required one Panel of data collection per year. If the FIA Field Support position was filled then the impact of loss in production would be reduced when the program has vacancies. In addition, the training issues discussed earlier would be eliminated as the FIA Field Support position would be responsible for training any new employees. The FIA Field Support position would be able to collect ownership data in front of field crews and standardize this aspect of data collection to reduce errors the field staff occasionally makes, due to some who are inexperienced. It would reduce time taken away from field staff production, to collect ownership data, and would allow this individual to assist the federal QA employee with check cruises. Other duties would include

collecting Timber Product Output (TPO) mill surveys. There is a great advantage to having one person collect these surveys, in that, the surveys are filled out consistently from one to another, it would be easier to keep up with what mills have closed and new ones that open for business, and maintain and oversee the primary wood producing mill directory and map. The Forest Inventory Coordinator would be available to assist and the FIA Field Support position would be able to assist the Forest Inventory Coordinator when the need arose. Lastly, the Forest Inventory Coordinator would be able to train the FIA Field Support position to take over if he moved onto another position or left the agency. The incorporation of a FIA Field Support position would build necessary efficiencies into the program and improve the program for the future.

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Appendix I

Workload Data

CYCLE 9

SAMPLE PLOT TYPE

PANELS	FOREST/PARITALS	NONFOREST	NONSAMPLED	NEW	AUTOGENERATED NONFOREST	% AUTOGENERATED NF
1	500	187	4	-	21	11.2%
2	497	192	1	-	25	13.0%
3	479	202	1	-	27	13.4%
4	489	183	5	-	12	6.6%
5	518	229	4	-	36	15.7%
TOTAL	2483	993	15	-	121	12.2%

CYCLE 10	SAMPLE PLOT TYPE								
Panels	Forest & Partial-Forest	Nonforest	Nonsampled	New	% Nonforest	Estimated % Autogenerated Nonforesta	Autogenerated Nonforest	% Autogenerated Nonforest	% Total Plots Autogenerated
1	498	189	3	1	27.4%		91	48.1%	13.2%
2	504	193	1	2	27.6%	60.0%	116	60.0%	16.5%
3	487	205	0	3	29.5%	60.0%	123	60.0%	17.7%
4	513	175	2	-	25.4%	60.0%	105	60.0%	15.2%
5	474	201	1		29.7%		162	80.6%	24.0%
TOTAL	**2476**	**963**	**7**	**6**	**27.9%**		**597**	**62.0%**	**17.3%**

[a]Unknown percentage for Panels 2, 3, and 4 due to new procedures being established to

Appendix II

Crew Counties – 4 Crews

ZONE 1		ZONE 2		ZONE 3		ZONE 4	
County	**#Plots**	**County**	**#Plots**	**County**	**#Plots**	**County**	**#Plots**
Abbeville	12	Aiken	18	Chesterfield	19	Allendale	6
Anderson	10	Calhoun	5	Clarendon	8	Bamberg	8
Cherokee	9	Chester	11	Darlington	7	Barnwell	9
Greenville	11	Edgefield	8	Dillon	5	Beaufort	6
Greenwood	9	Fairfield	13	Florence	15	Berkeley	22
Laurens	10	Kershaw	11	Georgetown	16	Charleston	10
McCormick	8	Lancaster	10	Horry	16	Colleton	21
Oconee	14	Lexington	10	Lee	3	Dorchester	8
Pickens	8	Newberry	11	Marion	11	Hampton	10
Spartanburg	10	Richland	18	Marlboro	8	Jasper	12
Union	8	Saluda	6	Williamsburg	18	Orangeburg	17
York	13	Sumter	9				
TOTAL	122	TOTAL	130	TOTAL	126	TOTAL	129

Crew Counties – 3 Crews

ZONE 1		ZONE 2		ZONE 3	
County	**#Plots**	**County**	**#Plots**	**County**	**#Plots**
Abbeville	12	Chesterfield	19	Allendale	6
Anderson	10	Clarendon	8	Aiken	18
Cherokee	9	Darlington	7	Bamberg	8
Chester	11	Dillon	5	Barnwell	9
Edgefield	8	Florence	15	Beaufort	6
Fairfield	13	Georgetown	16	Berkeley	22
Greenwood	9	Horry	16	Calhoun	5
Greenville	11	Kershaw	11	Charleston	10
Laurens	10	Lancaster	10	Colleton	21
McCormick	8	Lee	3	Dorchester	8
Newberry	11	Marion	11	Hampton	10
Oconee	14	Marlboro	8	Jasper	12
Pickens	8	Richland	18	Lexington	10
Saluda	6	Sumter	9	Orangeburg	17
Spartanburg	10	Williamsburg	18		
Union	8				
York	13				
TOTAL	171	TOTAL	174	TOTAL	162

Appendix III

Calculated Mileage – 4 Crews

Spartanburg Crew - Calculated Mileage for Panel 2							
COUNTY	PLOT #	DISTANCE TO PLOT	ROUNDTRIP	COUNTY	PLOT #	DISTANCE TO PLOT	ROUNDTRIP
Abbeville	10	75.7	151.4	McCormick	2	91.8	183.6
Abbeville	34	78.1	156.2	McCormick	18	93.6	187.2
Abbeville	60	55.9	111.8	McCormick	34	91.3	182.6
Abbeville	80	82.6	165.2	McCormick	37	82.6	165.2
Abbeville	82	82.8	165.6	McCormick	48	94.7	189.4
Abbeville	85	76.3	152.6	McCormick	52	77.5	155.0
Abbeville	86	63.2	126.4	McCormick	55	87.6	175.2
Abbeville	367	48.8	97.6	McCormick	365	87.1	174.2
Abbeville	370	68.6	137.2	Oconee	5	100.0	200.0
Abbeville	371	62.1	124.2	Oconee	22	86.7	173.4
Abbeville	373	69.8	139.6	Oconee	32	88.2	176.4
Abbeville	376	71.8	143.6	Oconee	34	93.1	186.2
Anderson	18	72.5	145.0	Oconee	40	86.9	173.8
Anderson	48	67.8	135.6	Oconee	53	79.8	159.6
Anderson	63	57.2	114.4	Oconee	70	73.1	146.2
Anderson	75	67.8	135.6	Oconee	100	90.4	180.8
Anderson	80	45.0	90.0	Oconee	113	83.0	166.0
Anderson	94	55.8	111.6	Oconee	376	96.9	193.8
Anderson	98	63.3	126.6	Oconee	377	75.7	151.4
Anderson	132	48.0	96.0	Oconee	380	78.1	156.2
Anderson	378	69.9	139.8	Oconee	382	100.0	200.0
Anderson	383	79.2	158.4	Oconee	385	81.5	163.0
Cherokee	25	19.5	39.0	Pickens	5	70.8	141.6
Cherokee	30	27.3	54.6	Pickens	9	68.5	137.0
Cherokee	53	27.4	54.8	Pickens	13	68.6	137.2
Cherokee	55	37.1	74.2	Pickens	16	67.7	135.4
Cherokee	59	37.7	75.4	Pickens	22	63.1	126.2
Cherokee	62	19.5	39.0	Pickens	31	63.5	127.0
Cherokee	63	15.4	30.8	Pickens	34	58.6	117.2
Cherokee	359	33.8	67.6	Pickens	368	51.7	103.4
Cherokee	364	29.0	58.0	Spartanburg	32	18.1	36.2
Greenville	20	42.3	84.6	Spartanburg	53	10.8	21.6
Greenville	34	40.5	81.0	Spartanburg	80	10.5	21.0
Greenville	35	37.9	75.8	Spartanburg	83	18.1	36.2
Greenville	46	38.3	76.6	Spartanburg	95	3.5	7.0
Greenville	65	40.2	80.4	Spartanburg	113	6.2	12.4
Greenville	84	29.8	59.6	Spartanburg	125	30.0	60.0
Greenville	97	40.4	80.8	Spartanburg	133	10.2	20.4
Greenville	103	27.8	55.6	Spartanburg	377	12.2	24.4
Greenville	115	30.8	61.6	Spartanburg	381	16.9	33.8
Greenville	126	57.7	115.4	Union	1	21.0	42.0
Greenville	386	37.9	75.8	Union	23	15.5	31.0
Greenwood	5	76.1	152.2	Union	33	25.1	50.2
Greenwood	18	56.5	113.0	Union	52	23.7	47.4
Greenwood	31	59.7	119.4	Union	58	39.1	78.2
Greenwood	47	74.0	148.0	Union	71	32.9	65.8
Greenwood	55	61.2	122.4	Union	84	27.2	54.4
Greenwood	60	59.2	118.4	Union	368	33.7	67.4
Greenwood	370	50.5	101.0	York	5	35.3	70.6
Greenwood	376	70.6	141.2	York	7	38.9	77.8
Greenwood	377	66.9	133.8	York	17	47.2	94.4
Laurens	7	40.9	81.8	York	20	43.0	86.0
Laurens	22	33.5	67.0	York	31	49.6	99.2
Laurens	36	44.9	89.8	York	52	50.9	101.8
Laurens	58	35.9	71.8	York	78	62.0	124.0
Laurens	61	25.8	51.6	York	99	69.1	138.2
Laurens	70	47.2	94.4	York	115	73.0	146.0
Laurens	74	40.2	80.4	York	375	61.4	122.8
Laurens	89	27.1	54.2	York	378	47.2	94.4
Laurens	101	38.8	77.6	York	379	62.9	125.8
Laurens	105	33.4	66.8	York	385	51.4	102.8
				TOTAL		3074.9	6149.8

Assumptions: Used MapSource software to calculate driving distances. Settings were set for shorter times and 66% of Road Selection to prefer highways

Newberry Crew - Calculated Mileage for Panel 2							
COUNTY	PLOT #	DISTANCE TO PLOT	ROUNDTRIP	COUNTY	PLOT #	DISTANCE TO PLOT	ROUNDTRIP
Aiken	3	65.1	130.2	Kershaw	385	58.8	117.6
Aiken	35	63.7	127.4	Lancaster	5	60.8	121.6
Aiken	63	53.2	106.4	Lancaster	12	66.3	132.6
Aiken	73	71.3	142.6	Lancaster	19	72.1	144.2
Aiken	109	53.2	106.4	Lancaster	40	62.1	124.2
Aiken	128	74.9	149.8	Lancaster	50	72.8	145.6
Aiken	144	45.0	90.0	Lancaster	51	74.5	149.0
Aiken	148	40.3	80.6	Lancaster	64	79.1	158.2
Aiken	197	61.2	122.4	Lancaster	69	81.4	162.8
Aiken	203	53.9	107.8	Lancaster	192	75.9	151.8
Aiken	224	81.7	163.4	Lancaster	368	66.0	132.0
Aiken	228	59.0	118.0	Lexington	11	28.2	56.4
Aiken	229	61.3	122.6	Lexington	12	20.6	41.2
Aiken	308	75.7	151.4	Lexington	28	47.3	94.6
Aiken	319	89.1	178.2	Lexington	77	57.4	114.8
Aiken	396	52.9	105.8	Lexington	92	42.2	84.4
Aiken	400	65.2	130.4	Lexington	108	63.0	126.0
Aiken	408	77.4	154.8	Lexington	155	47.5	95.0
Calhoun	24	64.9	129.8	Lexington	390	39.1	78.2
Calhoun	40	64.9	129.8	Lexington	395	57.1	114.2
Calhoun	52	74.7	149.4	Lexington	396	57.8	115.6
Calhoun	371	56.4	112.8	Newberry	7	19.3	38.6
Calhoun	373	75.5	151.0	Newberry	11	15.0	30.0
Chester	11	31.4	62.8	Newberry	25	10.8	21.6
Chester	16	37.1	74.2	Newberry	55	16.7	33.4
Chester	29	51.9	103.8	Newberry	74	6.2	12.4
Chester	41	47.6	95.2	Newberry	92	14.6	29.2
Chester	42	35.0	70.0	Newberry	106	12.8	25.6
Chester	52	48.2	96.4	Newberry	377	5.2	10.4
Chester	73	56.6	113.2	Newberry	381	16.2	32.4
Chester	84	67.5	135.0	Newberry	383	15.8	31.6
Chester	91	44.6	89.2	Newberry	386	26.5	53.0
Chester	372	54.1	108.2	Richland	7	22.8	45.6
Chester	374	54.3	108.6	Richland	38	34.8	69.6
Edgefield	5	71.5	143.0	Richland	54	40.9	81.8
Edgefield	15	48.5	97.0	Richland	68	47.7	95.4
Edgefield	34	60.2	120.4	Richland	99	50.7	101.4
Edgefield	42	40.0	80.0	Richland	104	50.1	100.2
Edgefield	45	52.3	104.6	Richland	120	47.5	95.0
Edgefield	49	40.4	80.8	Richland	145	61.4	122.8
Edgefield	76	46.7	93.4	Richland	156	59.4	118.8
Edgefield	351	48.1	96.2	Richland	163	58.1	116.2
Fairfield	2	23.7	47.4	Richland	177	61.8	123.6
Fairfield	4	28.4	56.8	Richland	198	74.4	148.8
Fairfield	19	29.2	58.4	Richland	382	25.6	51.2
Fairfield	42	35.6	71.2	Richland	383	35.5	71.0
Fairfield	49	37.4	74.8	Richland	384	53.6	107.2
Fairfield	63	41.8	83.6	Richland	385	41.6	83.2
Fairfield	78	41.3	82.6	Richland	386	51.7	103.4
Fairfield	82	46.1	92.2	Richland	393	67.5	135.0
Fairfield	88	50.1	100.2	Saluda	42	18.5	37.0
Fairfield	102	19.2	38.4	Saluda	47	35.8	71.6
Fairfield	112	29.8	59.6	Saluda	58	22.2	44.4
Fairfield	373	21.6	43.2	Saluda	69	34.0	68.0
Fairfield	377	29.9	59.8	Saluda	74	28.2	56.4
Kershaw	9	67.0	134.0	Saluda	364	29.1	58.2
Kershaw	40	52.8	105.6	Sumter	47	78.6	157.2
Kershaw	64	66.0	132.0	Sumter	64	81.8	163.6
Kershaw	83	75.7	151.4	Sumter	66	85.6	171.2
Kershaw	113	75.7	151.4	Sumter	137	88.9	177.8
Kershaw	140	85.5	171.0	Sumter	168	97.6	195.2
Kershaw	166	88.1	176.2	Sumter	183	111.0	222.0
Kershaw	190	80.0	160.0	Sumter	379	88.2	176.4
Kershaw	199	90.7	181.4	Sumter	380	69.5	139.0
Kershaw	205	85.6	171.2	Sumter	381	92.6	185.2
				TOTAL		3617.7	7235.4

Assumptions: Used MapSource software to calculate driving distances. Settings were set for shorter times and 66% of Road Selection to prefer highways

Florence Crew - Calculated Mileage for Panel 2							
COUNTY	PLOT #	DISTANCE TO PLOT	ROUNDTRIP	COUNTY	PLOT #	DISTANCE TO PLOT	ROUNDTRIP
Chesterfield	8	46.9	93.8	Georgetown	217	85.1	170.2
Chesterfield	15	53.7	107.4	Georgetown	396	65.6	131.2
Chesterfield	22	35.5	71.0	Georgetown	400	61.1	122.2
Chesterfield	44	60.8	121.6	Georgetown	406	69.0	138.0
Chesterfield	62	39.6	79.2	Georgetown	415	81.4	162.8
Chesterfield	69	44.9	89.8	Georgetown	416	83.4	166.8
Chesterfield	73	50.6	101.2	Georgetown	421	89.2	178.4
Chesterfield	82	26.4	52.8	Horry	1	45.1	90.2
Chesterfield	88	31.1	62.2	Horry	23	50.2	100.4
Chesterfield	108	53.3	106.6	Horry	29	51.8	103.6
Chesterfield	118	33.9	67.8	Horry	66	61.2	122.4
Chesterfield	120	38.0	76.0	Horry	79	48.3	96.6
Chesterfield	137	49.3	98.6	Horry	86	49.5	99.0
Chesterfield	167	31.9	63.8	Horry	106	60.1	120.2
Chesterfield	208	25.0	50.0	Horry	149	58.1	116.2
Chesterfield	394	61.6	123.2	Horry	172	79.2	158.4
Chesterfield	397	50.3	100.6	Horry	182	58.4	116.8
Chesterfield	399	34.5	69.0	Horry	204	64.2	128.4
Chesterfield	403	30.4	60.8	Horry	235	70.5	141.0
Clarendon	84	46.8	93.6	Horry	252	65.3	130.6
Clarendon	103	35.9	71.8	Horry	277	74.9	149.8
Clarendon	119	55.3	110.6	Horry	296	78.3	156.6
Clarendon	121	61.6	123.2	Horry	308	84.8	169.6
Clarendon	132	35.7	71.4	Lee	8	39.5	79.0
Clarendon	143	48.1	96.2	Lee	108	24.8	49.6
Clarendon	386	42.3	84.6	Lee	373	31.0	62.0
Clarendon	388	55.4	110.8	Marion	2	18.5	37.0
Darlington	5	27.2	54.4	Marion	3	20.4	40.8
Darlington	114	19.5	39.0	Marion	35	29.1	58.2
Darlington	116	7.9	15.8	Marion	39	32.4	64.8
Darlington	382	13.6	27.2	Marion	58	32.3	64.6
Darlington	383	12.6	25.2	Marion	82	44.0	88.0
Darlington	385	8.4	16.8	Marion	87	53.5	107.0
Darlington	387	11.3	22.6	Marion	99	41.9	83.8
Dillon	36	28.2	56.4	Marion	118	38.1	76.2
Dillon	42	25.7	51.4	Marion	124	39.5	79.0
Dillon	74	35.1	70.2	Marion	384	39.7	79.4
Dillon	102	44.2	88.4	Marlboro	27	29.5	59.0
Dillon	368	32.1	64.2	Marlboro	47	49.2	98.4
Florence	15	14.9	29.8	Marlboro	50	23.3	46.6
Florence	49	7.1	14.2	Marlboro	66	33.1	66.2
Florence	73	13.7	27.4	Marlboro	71	34.9	69.8
Florence	92	31.8	63.6	Marlboro	111	20.7	41.4
Florence	117	9.6	19.2	Marlboro	378	41.3	82.6
Florence	125	12.0	24.0	Marlboro	380	39.4	78.8
Florence	142	19.3	38.6	Williamsburg	3	60.2	120.4
Florence	187	37.7	75.4	Williamsburg	10	50.8	101.6
Florence	204	31.0	62.0	Williamsburg	14	52.1	104.2
Florence	206	37.6	75.2	Williamsburg	62	32.0	64.0
Florence	214	42.4	84.8	Williamsburg	78	46.0	92.0
Florence	393	20.5	41.0	Williamsburg	84	53.1	106.2
Florence	396	19.8	39.6	Williamsburg	104	44.8	89.6
Florence	399	25.3	50.6	Williamsburg	123	61.6	123.2
Florence	400	28.9	57.8	Williamsburg	130	66.3	132.6
Georgetown	9	75.5	151.0	Williamsburg	140	67.0	134.0
Georgetown	38	79.5	159.0	Williamsburg	149	61.5	123.0
Georgetown	73	63.2	126.4	Williamsburg	158	50.5	101.0
Georgetown	87	83.2	166.4	Williamsburg	178	46.0	92.0
Georgetown	120	56.4	112.8	Williamsburg	197	67.3	134.6
Georgetown	135	97.1	194.2	Williamsburg	222	62.2	124.4
Georgetown	181	71.6	143.2	Williamsburg	229	56.5	113.0
Georgetown	188	65.2	130.4	Williamsburg	233	52.1	104.2
Georgetown	202	89.1	178.2	Williamsburg	242	43.6	87.2
				TOTAL		2477.0	4954.0

Assumptions: Used MapSource software to calculate driving distances. Settings were set for shorter times and 66% of Road Selection to prefer highways

Walterboro Crew - Calculated Mileage for Panel 2							
COUNTY	PLOT #	DISTANCE TO PLOT	ROUNDTRIP	COUNTY	PLOT #	DISTANCE TO PLOT	ROUNDTRIP
Allendale	19	56.2	112.4	Colleton	37	18.3	36.6
Allendale	29	52.9	105.8	Colleton	46	21.9	43.8
Allendale	48	49.7	99.4	Colleton	48	17.2	34.4
Allendale	367	62.8	125.6	Colleton	64	20.3	40.6
Allendale	369	54.6	109.2	Colleton	107	9.7	19.4
Allendale	371	49.4	98.8	Colleton	139	7.0	14.0
Bamberg	21	48.8	97.6	Colleton	144	13.9	27.8
Bamberg	28	47.6	95.2	Colleton	162	9.5	19.0
Bamberg	42	39.2	78.4	Colleton	181	26.1	52.2
Bamberg	61	41.2	82.4	Colleton	186	24.1	48.2
Bamberg	77	33.4	66.8	Colleton	202	13.8	27.6
Bamberg	80	26.9	53.8	Colleton	204	14.0	28.0
Bamberg	89	43.0	86.0	Colleton	227	15.4	30.8
Bamberg	368	34.3	68.6	Colleton	244	27.8	55.6
Barnwell	1	67.7	135.4	Colleton	404	7.5	15.0
Barnwell	61	42.5	85.0	Colleton	405	5.9	11.8
Barnwell	80	62.6	125.2	Colleton	410	24.5	49.0
Barnwell	82	56.5	113.0	Colleton	411	16.7	33.4
Barnwell	206	71.0	142.0	Dorchester	1	25.7	51.4
Barnwell	224	66.1	132.2	Dorchester	66	20.4	40.8
Barnwell	233	63.6	127.2	Dorchester	73	27.7	55.4
Barnwell	381	72.4	144.8	Dorchester	82	25.3	50.6
Barnwell	384	70.9	141.8	Dorchester	100	28.4	56.8
Beaufort	32	60.8	121.6	Dorchester	376	23.6	47.2
Beaufort	36	54.7	109.4	Dorchester	378	16.1	32.2
Beaufort	43	28.5	57.0	Dorchester	381	24.5	49.0
Beaufort	74	70.6	141.2	Hampton	1	86.5	173.0
Beaufort	137	56.3	112.6	Hampton	18	46.3	92.6
Beaufort	405	35.1	70.2	Hampton	25	59.0	118.0
Berkeley	11	43.1	86.2	Hampton	28	59.1	118.2
Berkeley	12	55.8	111.6	Hampton	40	43.0	86.0
Berkeley	15	46.5	93.0	Hampton	46	39.6	79.2
Berkeley	34	34.3	68.6	Hampton	85	38.8	77.6
Berkeley	47	45.9	91.8	Hampton	97	30.2	60.4
Berkeley	93	40.5	81.0	Hampton	110	32.8	65.6
Berkeley	99	69.1	138.2	Hampton	377	42.4	84.8
Berkeley	105	70.3	140.6	Jasper	8	53.4	106.8
Berkeley	135	56.6	113.2	Jasper	29	52.8	105.6
Berkeley	192	61.5	123.0	Jasper	58	46.0	92.0
Berkeley	212	64.8	129.6	Jasper	83	54.2	108.4
Berkeley	218	61.2	122.4	Jasper	99	38.8	77.6
Berkeley	259	70.3	140.6	Jasper	112	35.6	71.2
Berkeley	261	70.7	141.4	Jasper	126	48.0	96.0
Berkeley	287	81.3	162.6	Jasper	131	49.9	99.8
Berkeley	410	70.4	140.8	Jasper	390	38.5	77.0
Berkeley	418	51.6	103.2	Jasper	391	58.7	117.4
Berkeley	421	47.0	94.0	Jasper	395	62.9	125.8
Berkeley	422	82.6	165.2	Jasper	398	34.7	69.4
Berkeley	426	57.7	115.4	Orangeburg	1	70.7	141.4
Berkeley	435	68.3	136.6	Orangeburg	9	64.5	129.0
Berkeley	439	64.4	128.8	Orangeburg	13	58.9	117.8
Charleston	9	25.3	50.6	Orangeburg	52	71.0	142.0
Charleston	24	30.0	60.0	Orangeburg	56	60.3	120.6
Charleston	69	33.5	67.0	Orangeburg	69	45.5	91.0
Charleston	93	36.1	72.2	Orangeburg	94	33.6	67.2
Charleston	106	55.0	110.0	Orangeburg	108	56.4	112.8
Charleston	126	48.6	97.2	Orangeburg	115	34.1	68.2
Charleston	199	70.1	140.2	Orangeburg	163	35.5	71.0
Charleston	240	87.6	175.2	Orangeburg	166	49.6	99.2
Charleston	435	78.6	157.2	Orangeburg	190	38.0	76.0
Charleston	476	61.4	122.8	Orangeburg	226	45.8	91.6
Colleton	7	26.5	53.0	Orangeburg	396	57.4	114.8
Colleton	11	23.2	46.4	Orangeburg	397	52.1	104.2
Colleton	33	17.9	35.8	Orangeburg	401	31.2	62.4
				Orangeburg	402	29.3	58.6
				TOTAL		3427.0	6854.0

Assumptions: Used MapSource software to calculate driving distances. Settings were set for shorter times and 66°• of Road Selection to prefer highways

Calculated Mileage – 3 Crews

Newberry Crew - Calculated Mileage for Panel 2

COUNTY	PLOT #	DISTANCE TO PLOT	ROUNDTRIP	COUNTY	PLOT #	DISTANCE TO PLOT	ROUNDTRIP
Abbeville	10	69.0	138.0	Laurens	36	36.3	72.6
Abbeville	34	59.6	119.2	Laurens	58	31.7	63.4
Abbeville	60	56.2	112.4	Laurens	61	35.7	71.4
Abbeville	80	71.7	143.4	Laurens	70	29.5	59.0
Abbeville	82	64.3	128.6	Laurens	74	28.1	56.2
Abbeville	85	57.4	114.8	Laurens	89	23.3	46.6
Abbeville	86	49.3	98.6	Laurens	101	16.2	32.4
Abbeville	367	54.6	109.2	Laurens	105	21.7	43.4
Abbeville	370	69.3	138.6	McCormick	2	73.3	146.6
Abbeville	371	58.2	116.4	McCormick	18	68.1	136.2
Abbeville	373	59.7	119.4	McCormick	34	62.0	124.0
Abbeville	376	53.4	106.8	McCormick	37	56.7	113.4
Anderson	18	85.1	170.2	McCormick	48	63.1	126.2
Anderson	48	78.0	156.0	McCormick	52	52.6	105.2
Anderson	63	71.9	143.8	McCormick	55	57.0	114.0
Anderson	75	74.0	148.0	McCormick	365	69.1	138.2
Anderson	80	70.0	140.0	Newberry	7	19.3	38.6
Anderson	94	67.6	135.2	Newberry	11	15.0	30.0
Anderson	98	69.5	139.0	Newberry	25	10.8	21.6
Anderson	132	60.7	121.4	Newberry	55	16.7	33.4
Anderson	378	86.2	172.4	Newberry	74	6.2	12.4
Anderson	383	79.0	158.0	Newberry	92	14.6	29.2
Cherokee	25	52.5	105.0	Newberry	106	12.8	25.6
Cherokee	30	60.7	121.4	Newberry	377	5.2	10.4
Cherokee	53	53.6	107.2	Newberry	381	16.2	32.4
Cherokee	55	73.5	147.0	Newberry	383	15.8	31.6
Cherokee	59	68.2	136.4	Newberry	386	26.5	53.0
Cherokee	62	68.3	136.6	Oconee	5	120.0	240.0
Cherokee	63	55.0	110.0	Oconee	22	108.0	216.0
Cherokee	359	66.3	132.6	Oconee	32	108.0	216.0
Cherokee	364	57.5	115.0	Oconee	34	113.0	226.0
Chester	11	31.4	62.8	Oconee	40	103.0	206.0
Chester	16	37.1	74.2	Oconee	53	113.0	226.0
Chester	29	51.9	103.8	Oconee	70	95.6	191.2
Chester	41	47.6	95.2	Oconee	100	113.0	226.0
Chester	42	35.0	70.0	Oconee	113	116.0	232.0
Chester	52	48.2	96.4	Oconee	376	117.0	234.0
Chester	73	56.6	113.2	Oconee	377	102.0	204.0
Chester	84	67.5	135.0	Oconee	380	105.0	210.0
Chester	91	44.6	89.2	Oconee	382	120.0	240.0
Chester	372	54.1	108.2	Oconee	385	102.0	204.0
Chester	374	54.3	108.6	Pickens	5	102.0	204.0
Edgefield	5	71.5	143.0	Pickens	9	100.0	200.0
Edgefield	15	48.5	97.0	Pickens	13	93.2	186.4
Edgefield	34	60.2	120.4	Pickens	16	89.1	178.2
Edgefield	42	40.0	80.0	Pickens	22	89.7	179.4
Edgefield	45	52.3	104.6	Pickens	31	89.4	178.8
Edgefield	49	40.4	80.8	Pickens	34	91.5	183.0
Edgefield	76	46.7	93.4	Pickens	368	77.5	155.0
Edgefield	351	48.1	96.2	Saluda	42	18.5	37.0
Fairfield	2	23.7	47.4	Saluda	47	35.8	71.6
Fairfield	4	28.4	56.8	Saluda	58	22.2	44.4
Fairfield	19	29.2	58.4	Saluda	69	34.0	68.0
Fairfield	42	35.6	71.2	Saluda	74	28.2	56.4
Fairfield	49	37.4	74.8	Saluda	364	29.1	58.2
Fairfield	63	41.8	83.6	Spartanburg	32	62.5	125.0
Fairfield	78	41.3	82.6	Spartanburg	53	49.4	98.8
Fairfield	82	46.1	92.2	Spartanburg	80	41.8	83.6
Fairfield	88	50.1	100.2	Spartanburg	83	35.4	70.8
Fairfield	102	19.2	38.4	Spartanburg	95	49.8	99.6
Fairfield	112	29.8	59.6	Spartanburg	113	50.8	101.6
Fairfield	373	21.6	43.2	Spartanburg	125	75.6	151.2
Fairfield	377	29.9	59.8	Spartanburg	133	58.4	116.8
Greenwood	5	52.6	105.2	Spartanburg	377	65.0	130.0
Greenwood	18	50.5	101.0	Spartanburg	381	45.3	90.6
Greenwood	31	43.3	86.6	Union	1	29.5	59.0
Greenwood	47	48.8	97.6	Union	23	42.3	84.6
Greenwood	55	34.2	68.4	Union	33	31.4	62.8
Greenwood	60	33.0	66.0	Union	52	42.1	84.2
Greenwood	370	50.8	101.6	Union	58	20.8	41.6
Greenwood	376	47.8	95.6	Union	71	31.6	63.2
Greenwood	377	39.7	79.4	Union	84	26.2	52.4
Greenville	20	59.1	118.2	Union	368	27.3	54.6
Greenville	34	71.2	142.4	York	5	48.8	97.6
Greenville	35	75.8	151.6	York	7	55.0	110.0
Greenville	46	83.8	167.6	York	17	67.9	135.8
Greenville	65	60.3	120.6	York	20	63.7	127.4
Greenville	84	67.6	135.2	York	31	75.1	150.2
Greenville	97	56.1	112.2	York	52	67.3	134.6
Greenville	103	72.0	144.0	York	78	61.1	122.2
Greenville	115	47.7	95.4	York	99	71.4	142.8
Greenville	126	89.1	178.2	York	115	80.3	160.6
Greenville	386	77.8	155.6	York	375	78.2	156.4
Laurens	7	44.6	89.2	York	378	71.2	142.4
Laurens	22	43.2	86.4	York	379	67.9	135.8
				York	385	58.7	117.4
				TOTAL		4639.4	9278.8

Assumptions: Used MapSource software to calculate driving distances. Settings were set for shortest time and 66% of Road Selection to prefer highways

Florence Crew - Calculated Mileage for Panel 2

COUNTY	PLOT #	DISTANCE TO PLOT	ROUNDTRIP	COUNTY	PLOT #	DISTANCE TO PLOT	ROUNDTRIP
Chesterfield	8	46.9	93.8	Kershaw	40	59.3	118.6
Chesterfield	15	53.7	107.4	Kershaw	64	64.2	128.4
Chesterfield	22	35.5	71.0	Kershaw	83	65.4	130.8
Chesterfield	44	60.8	121.6	Kershaw	113	51.2	102.4
Chesterfield	62	39.6	79.2	Kershaw	140	46.3	92.6
Chesterfield	69	44.9	89.8	Kershaw	166	46.6	93.2
Chesterfield	73	50.6	101.2	Kershaw	190	42.1	84.2
Chesterfield	82	26.4	52.8	Kershaw	199	38.5	77.0
Chesterfield	88	31.1	62.2	Kershaw	205	35.5	71.0
Chesterfield	108	53.3	106.6	Kershaw	385	61.4	122.8
Chesterfield	118	33.9	67.8	Lancaster	5	76.8	153.6
Chesterfield	120	38.0	76.0	Lancaster	12	74.6	149.2
Chesterfield	137	49.3	98.6	Lancaster	19	75.6	151.2
Chesterfield	167	31.9	63.8	Lancaster	40	67.4	134.8
Chesterfield	208	25.0	50.0	Lancaster	50	67.7	135.4
Chesterfield	394	61.6	123.2	Lancaster	51	71.7	143.4
Chesterfield	397	50.3	100.6	Lancaster	64	58.0	116.0
Chesterfield	399	34.5	69.0	Lancaster	69	61.2	122.4
Chesterfield	403	30.4	60.8	Lancaster	192	60.0	120.0
Clarendon	84	46.8	93.6	Lancaster	368	65.9	131.8
Clarendon	103	35.9	71.8	Lee	8	39.5	79.0
Clarendon	119	55.3	110.6	Lee	108	24.8	49.6
Clarendon	121	61.6	123.2	Lee	373	31.0	62.0
Clarendon	132	35.7	71.4	Marion	2	18.5	37.0
Clarendon	143	48.1	96.2	Marion	3	20.4	40.8
Clarendon	386	42.3	84.6	Marion	35	29.1	58.2
Clarendon	388	55.4	110.8	Marion	39	32.4	64.8
Darlington	5	27.2	54.4	Marion	58	32.3	64.6
Darlington	114	19.5	39.0	Marion	82	44.0	88.0
Darlington	116	7.9	15.8	Marion	87	53.5	107.0
Darlington	382	13.6	27.2	Marion	99	41.9	83.8
Darlington	383	12.6	25.2	Marion	118	38.1	76.2
Darlington	385	8.4	16.8	Marion	124	39.5	79.0
Darlington	387	11.3	22.6	Marion	384	39.7	79.4
Dillon	36	28.2	56.4	Marlboro	27	29.5	59.0
Dillon	42	25.7	51.4	Marlboro	47	49.2	98.4
Dillon	74	35.1	70.2	Marlboro	50	23.3	46.6
Dillon	102	44.2	88.4	Marlboro	66	33.1	66.2
Dillon	368	32.1	64.2	Marlboro	71	34.9	69.8
Florence	15	14.9	29.8	Marlboro	111	20.7	41.4
Florence	49	7.1	14.2	Marlboro	378	41.3	82.6
Florence	73	13.7	27.4	Marlboro	380	39.4	78.8
Florence	92	31.8	63.6	Richland	7	95.9	191.8
Florence	117	9.6	19.2	Richland	38	83.7	167.4
Florence	125	12.0	24.0	Richland	54	78.2	156.4
Florence	142	19.3	38.6	Richland	68	75.2	150.4
Florence	187	37.7	75.4	Richland	99	76.8	153.6
Florence	204	31.0	62.0	Richland	104	77.1	154.2
Florence	206	37.6	75.2	Richland	120	71.5	143.0
Florence	214	42.4	84.8	Richland	145	75.2	150.4
Florence	393	20.5	41.0	Richland	156	71.0	142.0
Florence	396	19.8	39.6	Richland	163	70.6	141.2
Florence	399	25.3	50.6	Richland	177	67.2	134.4
Florence	400	28.9	57.8	Richland	198	76.9	153.8
Georgetown	9	75.5	151.0	Richland	382	96.1	192.2
Georgetown	38	79.5	159.0	Richland	383	85.6	171.2
Georgetown	73	63.2	126.4	Richland	384	64.7	129.4
Georgetown	87	83.2	166.4	Richland	385	76.5	153.0
Georgetown	120	56.4	112.8	Richland	386	81.2	162.4
Georgetown	135	97.1	194.2	Richland	393	70.0	140.0
Georgetown	181	71.6	143.2	Sumter	47	47.5	95.0
Georgetown	188	65.2	130.4	Sumter	64	56.5	113.0
Georgetown	202	89.1	178.2	Sumter	66	59.0	118.0
Georgetown	217	85.1	170.2	Sumter	137	42.4	84.8
Georgetown	396	65.6	131.2	Sumter	168	32.8	65.6
Georgetown	400	61.1	122.2	Sumter	183	19.9	39.8
Georgetown	406	69.0	138.0	Sumter	379	35.8	71.6
Georgetown	415	81.4	162.8	Sumter	380	67.8	135.6
Georgetown	416	83.4	166.8	Sumter	381	50.4	100.8
Georgetown	421	89.2	178.4	Williamsburg	3	60.2	120.4
Horry	1	45.1	90.2	Williamsburg	10	50.8	101.6
Horry	23	50.2	100.4	Williamsburg	14	52.1	104.2
Horry	29	51.8	103.6	Williamsburg	62	32.0	64.0
Horry	66	61.2	122.4	Williamsburg	78	46.0	92.0
Horry	79	48.3	96.6	Williamsburg	84	53.1	106.2
Horry	86	49.5	99.0	Williamsburg	104	44.8	89.6
Horry	106	60.1	120.2	Williamsburg	123	61.6	123.2
Horry	149	58.1	116.2	Williamsburg	130	66.3	132.6
Horry	172	79.2	158.4	Williamsburg	140	67.0	134.0
Horry	182	58.4	116.8	Williamsburg	149	61.5	123.0
Horry	204	64.2	128.4	Williamsburg	158	50.5	101.0
Horry	235	70.5	141.0	Williamsburg	178	46.0	92.0
Horry	252	65.3	130.6	Williamsburg	197	67.3	134.6
Horry	277	74.9	149.8	Williamsburg	222	62.2	124.4
Horry	296	78.3	156.6	Williamsburg	229	56.5	113.0
Horry	308	84.8	169.6	Williamsburg	233	52.1	104.2
Kershaw	9	72.5	145.0	Williamsburg	242	43.6	87.2
				TOTAL		4084.2	8168.4

Assumptions: Used MapSource software to calculate driving distances. Settings were set for shortest times and 66% of Road Selection to prefer highways

Walterboro Crew - Calculated Mileage for Panel 2

COUNTY	PLOT #	DISTANCE TO PLOT	ROUNDTRIP	COUNTY	PLOT #	DISTANCE TO PLOT	ROUNDTRIP
Allendale	19	56.2	112.4	Charleston	240	87.6	175.2
Allendale	29	52.9	105.8	Charleston	435	78.6	157.2
Allendale	48	49.7	99.4	Charleston	476	61.4	122.8
Allendale	367	62.8	125.6	Colleton	7	26.5	53.0
Allendale	369	54.6	109.2	Colleton	11	23.2	46.4
Allendale	371	49.4	98.8	Colleton	33	17.9	35.8
Aiken	3	97.7	195.4	Colleton	37	18.3	36.6
Aiken	35	91.7	183.4	Colleton	46	21.9	43.8
Aiken	63	95.4	190.8	Colleton	48	17.2	34.4
Aiken	73	81.1	162.2	Colleton	64	20.3	40.6
Aiken	109	90.0	180.0	Colleton	107	9.7	19.4
Aiken	128	73.1	146.2	Colleton	139	7.0	14.0
Aiken	144	92.6	185.2	Colleton	144	13.9	27.8
Aiken	148	96.3	192.6	Colleton	162	9.5	19.0
Aiken	197	72.5	145.0	Colleton	181	26.1	52.2
Aiken	203	79.2	158.4	Colleton	186	24.1	48.2
Aiken	224	84.4	168.8	Colleton	202	13.8	27.6
Aiken	228	90.5	181.0	Colleton	204	14.0	28.0
Aiken	229	87.3	174.6	Colleton	227	15.4	30.8
Aiken	308	79.9	159.8	Colleton	244	27.8	55.6
Aiken	319	70.9	141.8	Colleton	404	7.5	15.0
Aiken	396	84.2	168.4	Colleton	405	5.9	11.8
Aiken	400	75.7	151.4	Colleton	410	24.5	49.0
Aiken	408	90.6	181.2	Colleton	411	16.7	33.4
Bamberg	21	48.8	97.6	Dorchester	1	25.7	51.4
Bamberg	28	47.6	95.2	Dorchester	66	20.4	40.8
Bamberg	42	39.2	78.4	Dorchester	73	27.7	55.4
Bamberg	61	41.2	82.4	Dorchester	82	25.3	50.6
Bamberg	77	33.4	66.8	Dorchester	100	28.4	56.8
Bamberg	80	26.9	53.8	Dorchester	376	23.6	47.2
Bamberg	89	43.0	86.0	Dorchester	378	16.1	32.2
Bamberg	368	34.3	68.6	Dorchester	381	24.5	49.0
Barnwell	1	67.7	135.4	Hampton	1	86.5	173.0
Barnwell	61	42.5	85.0	Hampton	18	46.3	92.6
Barnwell	80	62.6	125.2	Hampton	25	59.0	118.0
Barnwell	82	56.5	113.0	Hampton	28	59.1	118.2
Barnwell	206	71.0	142.0	Hampton	40	43.0	86.0
Barnwell	224	66.1	132.2	Hampton	46	39.6	79.2
Barnwell	233	63.6	127.2	Hampton	85	38.8	77.6
Barnwell	381	72.4	144.8	Hampton	97	30.2	60.4
Barnwell	384	70.9	141.8	Hampton	110	32.8	65.6
Beaufort	32	60.8	121.6	Hampton	377	42.4	84.8
Beaufort	36	54.7	109.4	Jasper	8	53.4	106.8
Beaufort	43	28.5	57.0	Jasper	29	52.8	105.6
Beaufort	74	70.6	141.2	Jasper	58	46.0	92.0
Beaufort	137	56.3	112.6	Jasper	83	54.2	108.4
Beaufort	405	35.1	70.2	Jasper	99	38.8	77.6
Berkeley	11	43.1	86.2	Jasper	112	35.6	71.2
Berkeley	12	55.8	111.6	Jasper	126	48.0	96.0
Berkeley	15	46.5	93.0	Jasper	131	49.9	99.8
Berkeley	34	34.3	68.6	Jasper	390	38.5	77.0
Berkeley	47	45.9	91.8	Jasper	391	58.7	117.4
Berkeley	93	40.5	81.0	Jasper	395	62.9	125.8
Berkeley	99	69.1	138.2	Jasper	398	34.7	69.4
Berkeley	105	70.3	140.6	Lexington	11	109.0	218.0
Berkeley	135	56.6	113.2	Lexington	12	117.0	234.0
Berkeley	192	61.5	123.0	Lexington	28	90.6	181.2
Berkeley	212	64.8	129.6	Lexington	77	79.3	158.6
Berkeley	218	61.2	122.4	Lexington	92	92.8	185.6
Berkeley	259	70.3	140.6	Lexington	108	72.9	145.8
Berkeley	261	70.7	141.4	Lexington	155	81.7	163.4
Berkeley	287	81.3	162.6	Lexington	390	91.4	182.8
Berkeley	410	70.4	140.8	Lexington	395	74.8	149.6
Berkeley	418	51.6	103.2	Lexington	396	71.5	143.0
Berkeley	421	47.0	94.0	Orangeburg	1	70.7	141.4
Berkeley	422	82.6	165.2	Orangeburg	9	64.5	129.0
Berkeley	426	57.7	115.4	Orangeburg	13	58.9	117.8
Berkeley	435	68.3	136.6	Orangeburg	52	71.0	142.0
Berkeley	439	64.4	128.8	Orangeburg	56	60.3	120.6
Calhoun	24	63.0	126.0	Orangeburg	69	45.5	91.0
Calhoun	40	67.7	135.4	Orangeburg	94	33.6	67.2
Calhoun	52	54.4	108.8	Orangeburg	108	56.4	112.8
Calhoun	371	75.9	151.8	Orangeburg	115	34.1	68.2
Calhoun	373	61.7	123.4	Orangeburg	163	35.5	71.0
Charleston	9	25.3	50.6	Orangeburg	166	49.6	99.2
Charleston	24	30.0	60.0	Orangeburg	190	38.0	76.0
Charleston	69	33.5	67.0	Orangeburg	226	45.8	91.6
Charleston	93	36.1	72.2	Orangeburg	396	57.4	114.8
Charleston	106	55.0	110.0	Orangeburg	397	52.1	104.2
Charleston	126	48.6	97.2	Orangeburg	401	31.2	62.4
Charleston	199	70.1	140.2	Orangeburg	402	29.3	58.6
				TOTAL		4987.6	9975.2

Assumptions: Used MapSource software to calculate driving distances. Settings were set for shorter times and 66% of Road Selection to prefer highways

Appendix IV

2006 – 2007 Actual Fuel Cost and Consumption

Spartanburg - 13083 - Fuel and Mileage

Year	Month	Quantity	Cost	Beginning Mileage	Ending Mileage	Year	Month	Quantity	Cost	Beginning Mileage	Ending Mileage
2006	January	16.20	$32.89	14788		2007	January	20.72	$44.48	44793	
		17.20	$34.93					21.42	$43.07		
		22.36	$45.42					19.69	$39.59		
		19.67	$42.68					19.56	$36.92		
		21.02	$32.58					18.39	$34.71		
		18.66	$39.55					15.80	$28.92		
		22.10	$46.83					20.65	$37.80		
		21.01	$45.24					20.22	$37.02		
		19.40	$41.75				February	18.28	$34.95		
	February	19.73	$40.93					13.99	$27.47		
		17.51	$36.31					17.01	$33.40		
		18.13	$37.91					17.63	$34.60		
		20.42	$42.71					20.68	$40.86		
		18.98	$37.82					1.65	$3.26		
		19.97	$39.79					21.03	$43.67		
		20.24	$42.41				March	23.26	$50.01		
		18.12	$36.11					22.64	$51.80		
		19.33	$40.51					17.64	$40.37		
		20.91	$43.85					23.07	$53.29		
	March	22.85	$47.89					19.34	$44.75		
		21.14	$45.37					17.21	$40.05		
		23.48	$50.38					20.22	$46.83		
		19.75	$42.97					19.25	$44.60		
		21.50	$45.95				April	16.40	$37.99		
		18.80	$40.41					21.01	$50.67		
		19.67	$42.27					14.79	$35.66		
		19.48	$45.89					18.97	$48.38		
		20.09	$47.33					18.20	$46.42		
		20.34	$45.11					16.26	$43.19		
	April	18.32	$40.63					18.01	$55.23		
		21.53	$52.24					22.80	$57.96		
		21.58	$52.36					21.10	$53.63		
		20.56	$52.49				May	20.72	$57.73		
		17.03	$43.47					14.70	$40.96		
		21.08	$58.49					17.86	$48.67		
	May	17.51	$48.57					19.13	$52.35		
		22.50	$59.38					15.25	$41.74		
		21.93	$56.22					18.20	$49.83		
		20.56	$54.64					22.34	$65.99		
		18.85	$46.21					21.61	$63.82		
	June	21.93	$53.37					19.33	$53.40		
		19.67	$55.02				June	18.14	$49.99		
		23.88	$70.31					20.60	$55.54		
		23.32	$60.80					14.95	$40.31		
		20.30	$51.16					16.53	$43.42		
		19.78	$50.05					17.63	$46.32		
	July	20.92	$55.43					17.73	$47.53		
		21.90	$58.03					22.92	$61.46		
		20.29	$54.86				July	20.30	$54.42		
		23.92	$64.45					16.57	$43.97		
		20.90	$57.39					20.07	$53.26		
	August	17.93	$49.41					22.00	$59.44		
		20.50	$56.50					17.78	$48.03		
		20.81	$57.36					18.88	$52.00		
		21.08	$59.95					23.21	$63.93		
		19.21	$53.54					21.59	$59.46		
		23.18	$57.84					20.04	$52.61		
		21.08	$49.79					20.84	$54.69		
	September	18.67	$44.08				August	19.09	$48.12		
		23.76	$55.01					21.88	$55.16		
		21.20	$45.25					17.70	$44.08		
		21.54	$45.97					22.48	$55.99		
		22.70	$46.73					22.36	$53.87		
		22.65	$46.64					20.09	$48.40		
	October	21.76	$42.66					22.06	$55.40		
		23.51	$46.46					19.80	$46.89		
		17.62	$35.85				September	22.03	$56.44		
		22.16	$45.08					21.10	$54.07		
		24.28	$48.90					22.16	$57.60		
		16.68	$37.18					19.65	$50.31		
		22.76	$45.17					9.62	$24.63		
		23.51	$46.66					19.51	$51.77		
		19.90	$39.60				October	16.96	$45.00		
		20.88	$41.56					21.87	$55.98		
	November	20.10	$41.10					21.71	$55.57		
		20.49	$41.89					23.52	$60.19		
		21.02	$45.17					16.02	$40.06		
		21.83	$43.51					20.63	$52.11		
		16.32	$33.78					21.83	$55.14		
		14.73	$30.48					23.13	$58.41		
		18.86	$39.05					19.64	$51.58		
	December	20.67	$44.55				November	19.17	$50.17		
		21.84	$47.09					22.42	$62.88		
		18.88	$39.04					22.90	$64.23		
		21.44	$44.71		44793			20.60	$60.19		
Totals		1,739.80	$3,976.94					22.88	$66.86		
								15.44	$43.99		
Avg. Cost/Gallon		$2.29						22.21	$64.22		
Mileage		30,005						19.06	$55.11		
MPG		17.2					December	19.14	$51.57		
								21.70	$58.46		
								21.69	$56.88		
								21.08	$55.29		
								17.86	$49.89		75019
						Totals		1,826.68	$4,598.95		
						Avg. Cost/Gallon		$2.52			
						Mileage		30,226			
						MPG		16.5			
Summary											
Average Gal/Year		1,783.24									
Average Miles/Year		30,116									
Average MPG		16.9									
Average Cost/Year		$4,287.95									

Newberry - 12296 & 13213 - Fuel and Mileage

Year	Month	Quantity	Cost	Beginning Mileage	Ending Mileage	Year	Month	Quantity	Cost	Beginning Mileage	Ending Mileage
2006	January	12.73	$25.85	138027		2007	January	23.51	$47.27	27289	
12296		12.70	$27.56					21.66	$40.88		
		14.04	$30.47					19.84	$37.45		
		13.52	$29.11					22.25	$40.73		
		14.29	$30.76					17.38	$35.01		
	February	11.70	$24.27				February	19.18	$35.11		
		13.05	$27.07					20.91	$41.05		
		13.54	$28.09					21.20	$41.62		
		13.12	$27.43					21.19	$41.60		
		11.11	$23.24					20.61	$40.71		
		12.06	$25.22					18.51	$36.57		
		14.16	$28.22					21.28	$44.18		
		10.10	$20.12					22.26	$47.86		
		14.29	$28.48		141310		March	20.43	$43.93		
13213		22.33	$42.71	95				21.17	$48.44		
	March	22.50	$43.97					22.02	$50.87		
		23.90	$46.70					23.99	$55.42		
		21.90	$45.37					24.75	$57.59		
		22.60	$46.82					22.62	$52.63		
		18.07	$37.43					21.10	$48.87		
		19.78	$42.52				April	23.79	$55.11		
		19.10	$41.05					20.33	$49.03		
		22.80	$49.00					21.32	$51.43		
		24.40	$57.48					21.60	$55.09		
		24.00	$56.54					23.47	$59.88		
		22.00	$48.79					21.33	$54.41		
	April	23.50	$52.12					20.27	$53.83		
		22.10	$53.62					24.05	$61.13		
		18.98	$46.05					22.41	$56.98		
		20.90	$50.71				May	18.67	$52.01		
		22.45	$57.31					22.15	$61.71		
		23.50	$60.00					18.97	$51.69		
		23.00	$60.81					22.30	$61.03		
		23.67	$62.59					22.81	$62.45		
		22.86	$63.44					20.13	$59.47		
	May	22.70	$59.91					20.64	$60.98		
		23.27	$61.42					20.41	$60.29		
		21.08	$54.04					20.99	$57.98		
		21.74	$57.79				June	19.76	$54.60		
		22.94	$60.97					10.67	$29.40		
		20.78	$50.94					19.42	$52.36		
		21.64	$53.05					21.28	$57.37		
	June	22.23	$56.26					17.79	$47.96		
		18.26	$46.20					19.50	$51.22		
		20.66	$53.88					25.35	$66.61		
		22.78	$59.40					22.99	$61.64		
		21.69	$54.66				July	21.11	$56.60		
		22.70	$57.46					24.84	$65.92		
		18.90	$47.83					19.72	$53.29		
	July	19.94	$52.84					20.70	$55.93		
		19.34	$52.29					24.67	$67.95		
		19.79	$53.52					22.40	$58.80		
		23.20	$62.51					8.74	$22.93		
		20.09	$60.18				August	20.46	$51.58		
		24.14	$66.27					21.10	$53.20		
		19.16	$52.61					20.07	$49.99		
	August	19.52	$53.79					21.78	$54.26		
		22.31	$61.49					21.22	$51.12		
		20.67	$58.79					21.14	$50.92		
		22.49	$63.96					21.32	$53.55		
		20.28	$53.22					22.96	$57.67		
		19.15	$50.23					20.03	$47.44		
		23.30	$58.13				September	20.63	$52.87		
		23.51	$55.53					24.60	$63.94		
	September	22.00	$51.96					22.83	$58.46		
		19.51	$45.17					17.63	$45.14		
		22.03	$51.00					23.56	$60.33		
		20.59	$43.94					22.43	$59.52		
		21.97	$46.90				October	18.77	$48.03		
		22.52	$46.36					22.23	$56.90		
		23.88	$46.81					20.45	$52.33		
	October	24.16	$47.37					20.47	$52.40		
		23.23	$47.27					22.67	$56.69		
		23.75	$48.32					25.20	$63.04		
		18.96	$38.19					20.54	$51.88		
		21.95	$43.55					19.77	$49.93		
		21.31	$42.29					19.63	$51.55		
		18.63	$37.08					22.07	$57.95		
	November	16.79	$34.34					22.54	$58.99		
		19.73	$39.33				November	21.11	$55.25		
		22.01	$43.88					22.98	$64.46		
		19.65	$39.17					18.26	$51.21		
		18.09	$37.44					23.72	$69.31		
		17.45	$36.12					20.57	$60.10		
		23.22	$48.07					23.73	$68.62		
		21.79	$44.92				December	16.84	$48.70		
		17.69	$37.02					22.07	$59.45		
	December	23.96	$51.64					23.26	$60.99		
		20.96	$43.34					19.93	$52.27		
		22.08	$45.66					22.16	$58.11		
Totals		1,810.90	$4,207.23		27289			21.19	$59.20		
								20.15	$56.29		56584
Avg. Cost/Gallon		$2.32				Totals		1,942.51	$4,888.51		
Mileage		3,283									
		27,194				Avg. Cost/Gallon		$2.52			
		30,477				Mileage		29,295			
MPG		16.8				MPG		15.1			
Summary											
Average Gal/Year		1,876.70									
Average Miles/Year		29,886									
MPG		16.0									
Average Cost/Year		$4,547.87									

Florence - 12830 - Fuel and Mileage

Year	Month	Quantity	Cost	Beginning Mileage	Ending Mileage	Year	Month	Quantity	Cost	Beginning Mileage	Ending Mileage
2006	January	21.41	$43.47	78968		2007	January	23.23	$47.94	107110	
		22.14	$48.03					18.10	$36.39		
		16.46	$35.71					8.16	$16.41		
	February	18.80	$38.99					17.89	$35.96		
		22.00	$45.63					21.42	$40.43		
		21.76	$45.50					21.76	$39.84		
		22.72	$47.52					18.71	$34.25		
		21.00	$43.92				February	18.28	$33.47		
		20.46	$40.77					21.41	$40.93		
		22.28	$44.40					16.09	$30.75		
		22.40	$44.63					19.41	$38.10		
		22.80	$43.60					13.86	$27.20		
	March	21.44	$41.89					15.19	$29.81		
		23.78	$46.47					10.49	$20.72		
		21.90	$45.36					18.37	$36.30		
		20.55	$42.56					11.48	$22.67		
		22.74	$47.10					10.17	$21.12		
		23.14	$50.00					20.08	$41.69		
		21.10	$45.35					20.03	$43.07		
		20.84	$44.80				March	20.37	$44.53		
		22.77	$53.65					10.23	$23.50		
		22.93	$54.01					19.88	$45.50		
		22.57	$50.06					17.40	$39.81		
	April	21.96	$48.70					21.57	$49.36		
		8.00	$19.42					18.02	$41.24		
		18.85	$45.74					10.46	$24.16		
		19.04	$48.60					17.95	$41.47		
		22.42	$57.22					12.37	$28.48		
		17.79	$47.03					18.43	$42.56		
		23.08	$61.03					17.49	$40.68		
		18.84	$52.28					22.45	$52.23		
		19.59	$54.35					8.43	$19.62		
	May	21.92	$57.84					21.74	$50.37		
		21.02	$55.47				April	19.96	$48.14		
		20.29	$52.01					19.35	$46.66		
		22.20	$56.91					20.75	$52.93		
		23.14	$61.51					18.43	$47.01		
		23.56	$62.61					19.09	$50.69		
		20.81	$51.02					16.13	$42.83		
		21.81	$53.47					20.77	$55.15		
		21.02	$51.16					18.69	$49.54		
	June	19.39	$47.19					18.38	$46.71		
		23.55	$59.61				May	18.59	$47.26		
		11.73	$32.79					15.26	$42.51		
		22.36	$56.60					7.71	$21.49		
		24.50	$63.89					17.65	$49.18		
		22.47	$58.60					14.11	$39.30		
		20.56	$51.81					17.47	$47.60		
		18.43	$46.45					19.70	$53.93		
		22.68	$57.42					14.10	$38.59		
		16.73	$42.36					20.37	$55.76		
	July	21.86	$55.33					20.25	$59.81		
		24.12	$63.90					20.31	$60.00		
		16.91	$45.73					22.06	$60.94		
		22.15	$59.68				June	21.70	$59.95		
		13.03	$35.11					16.52	$45.52		
		20.50	$56.30					19.75	$57.20		
	August	20.84	$57.44					16.53	$44.57		
		21.69	$59.77					18.99	$51.21		
		15.63	$43.08					18.96	$49.82		
		21.56	$61.33					10.94	$28.73		
		20.37	$60.00					12.80	$33.62		
		16.32	$42.83					21.02	$55.23		
		15.22	$37.98					12.44	$33.36		
	September	20.63	$47.76					19.05	$51.07		
		22.04	$47.04				July	16.98	$45.53		
		21.65	$46.22					9.07	$24.08		
		21.39	$44.05					13.55	$35.97		
		17.10	$35.20					17.59	$46.70		
		22.31	$43.74					21.35	$57.70		
	October	22.40	$43.91					21.62	$58.41		
		18.72	$38.08					14.98	$40.47		
		16.91	$34.05					17.54	$48.29		
		20.93	$42.16					9.41	$25.92		
		19.78	$39.26					9.86	$27.14		
		22.50	$44.66					21.84	$57.33		
		19.13	$38.06					18.82	$49.39		
	November	17.99	$36.79					10.91	$28.63		
		0.03	$0.06					14.64	$38.42		
		19.78	$40.44				August	21.00	$52.93		
		21.54	$42.94					15.17	$38.24		
		17.07	$34.02					7.94	$20.00		
		19.51	$40.39					14.24	$35.46		
		22.90	$47.41					14.47	$36.05		
		18.19	$37.50					10.63	$26.47		
	December	19.33	$40.44					17.25	$41.56		
		18.32	$39.49					19.35	$46.62		
		21.49	$46.33					19.97	$50.15		
		19.89	$41.13		107110			19.86	$49.88		
Totals		1,797.42	$4,166.12					21.55	$51.04		
								10.87	$25.74		
Avg. Cost/Gallon		$2.32					September	17.64	$41.77		
Mileage		28,122						17.09	$43.78		
MPG		15.6						16.47	$42.80		
								18.88	$49.06		
								17.56	$44.95		
								15.81	$41.95		
							October	11.04	$29.28		
								18.21	$46.61		
								19.13	$48.95		
								13.45	$34.43		
								16.90	$42.27		
								22.00	$55.03		
								22.13	$58.13		
							November	19.81	$51.86		
								21.38	$59.97		
								17.54	$51.25		
								19.09	$54.38		
								20.37	$58.89		
							December	20.12	$58.18		
								19.97	$53.81		
								20.35	$53.37		
								18.92	$52.87		137850
						Totals		1,942.99	$4,838.58		
						Avg. Cost/Gallon		$2.49			
						Mileage		30,740			
						MPG		15.8			
Summary											
Average Gal/Year		1,870.20									
Average Miles/Year		29,431									
MPG		15.7									
Average Cost/Year		$4,502.35									

Walterboro - 12726 - Fuel and Mileage

Year	Month	Quantity	Cost	Beginning Mileage	Ending Mileage	Year	Month	Quantity	Cost	Beginning Mileage	Ending Mileage
2006	January	22.87	$46.44	72121		2007	January	25.01	$53.69	105077	
		24.10	$56.57					25.73	$54.54		
		22.95	$49.79					25.25	$50.76		
		23.80	$51.64					25.13	$47.43		
		19.38	$41.08					24.01	$43.96		
		23.05	$49.63					23.77	$43.52		
		25.01	$53.84					25.51	$48.77		
		23.48	$51.59				February	23.75	$45.39		
		22.09	$50.72					23.13	$45.40		
	February	23.48	$51.59					23.73	$46.88		
		24.68	$53.46					24.52	$48.44		
		24.78	$49.46					24.54	$50.95		
		25.24	$50.40					24.79	$51.47		
		23.76	$49.56				March	25.01	$53.77		
		22.54	$44.91					24.80	$56.75		
		23.91	$45.73					23.51	$53.81		
	March	25.01	$48.88					24.69	$57.03		
		25.30	$51.00					22.50	$51.97		
		25.02	$51.82					20.42	$47.50		
		23.92	$52.53					22.09	$51.40		
		24.35	$53.50					25.64	$59.40		
		24.81	$59.44				April	24.20	$58.37		
		21.61	$51.77					22.81	$55.02		
		20.80	$49.86					25.46	$67.61		
		23.61	$56.57					23.93	$63.54		
		19.60	$46.98					24.11	$61.29		
	April	21.93	$54.74				May	25.10	$69.93		
		23.80	$56.55					24.12	$65.73		
		24.42	$59.25					24.38	$66.74		
		22.76	$58.10					25.18	$74.38		
		23.90	$61.01				June	25.18	$69.57		
		23.70	$62.67					24.06	$66.31		
		23.35	$61.75					23.80	$65.59		
		23.60	$65.49					25.86	$69.72		
	May	20.15	$53.18					22.75	$59.77		
		6.52	$17.21					23.73	$63.62		
		20.51	$54.13				July	24.10	$63.96		
		20.01	$51.29					24.29	$65.63		
		21.60	$61.61					23.26	$62.86		
		23.53	$62.53					25.07	$69.03		
		21.14	$58.58					21.07	$55.31		
		21.98	$53.88					25.01	$65.64		
		21.71	$59.73				August	23.01	$58.00		
	June	24.62	$59.94					22.74	$57.33		
		22.60	$57.20					25.20	$62.76		
		23.04	$58.32					25.20	$62.77		
		22.19	$57.86					25.57	$63.68		
		25.20	$65.70					23.42	$56.42		
		25.20	$65.70					19.46	$46.87		
		22.65	$57.09					23.63	$59.34		
		25.39	$64.00					24.81	$62.32		
		19.85	$50.25					23.65	$56.01		
	July	22.57	$57.11					23.46	$55.56		
		25.01	$66.28				September	23.09	$59.17		
		25.19	$66.76					16.17	$41.44		
		24.64	$66.61					25.01	$65.01		
		24.65	$66.65					19.62	$50.24		
		21.75	$58.60					22.94	$58.74		
		21.34	$57.49					22.97	$60.94		
		19.94	$58.94				October	25.19	$66.83		
		21.68	$59.53					22.48	$57.54		
		24.56	$67.44					22.73	$58.18		
	August	24.33	$67.06					0.38	$0.95		
		17.37	$47.87					21.38	$54.01		
		23.27	$66.19					24.19	$63.52		
		20.35	$57.88					18.43	$48.41		
		24.65	$64.67				November	13.95	$40.76		
		23.00	$57.38					6.81	$19.89		
	September	24.24	$57.25					17.91	$51.02		
		19.54	$45.23					20.01	$57.86		
		19.59	$45.36				December	24.33	$65.55		
		23.61	$59.00					19.58	$51.35		
		25.01	$53.38					20.56	$57.89		
		23.22	$49.56					24.48	$68.40		131550
		23.37	$48.13			Totals		1,687.35	$4,161.21		
		22.60	$46.54								
		24.79	$51.04			Avg. Cost/Gallon		$2.47			
		21.80	$42.75			Mileage		26,473			
		24.21	$47.47			MPG		15.7			
	October	23.82	$48.47								
		24.28	$48.92								
		21.44	$43.18								
		21.77	$43.85								
		25.49	$50.60								
		24.53	$48.82								
	November	22.78	$46.58								
		21.92	$45.37								
		19.06	$39.45								
		25.24	$52.02								
		23.91	$49.27								
	December	23.56	$49.29								
		22.95	$49.46								
		24.55	$52.92								
		24.31	$53.13								
		24.32	$50.72		105077						
Totals		2,174.69	$5,110.74								
Avg. Cost/Gallon		$2.35									
Mileage		32,956									
MPG		15.2									
Summary											
Average Gal/Year		1,931.02									
Average Miles/Year		29,715									
MPG		15.4									
Average Cost/Year		$4,635.98									

Columbia - 12183 - Fuel and Mileage											
Year	Month	Quantity	Cost	Beginning Mileage	Ending Mileage	Year	Month	Quantity	Cost	Beginning Mileage	Ending Mileage
2006	January	14.10	$33.09	104532		2007	January	12.62	$26.05	116485	
		13.28	$28.63					14.43	$27.24		
		10.51	$21.92					15.27	$27.96		
		12.17	$26.20				February	13.85	$26.47		
	February	13.07	$27.33					13.86	$26.28		
	March	8.04	$16.66					13.06	$25.55		
		10.91	$22.61					10.75	$21.51		
		12.92	$27.78					13.80	$26.17		
	April	15.93	$37.86					13.86	$28.41		
		10.57	$27.12					12.41	$24.78		
		15.80	$39.37					11.16	$22.28		
		16.30	$42.32					12.55	$26.11		
		12.60	$32.70					14.04	$28.03		
		14.45	$37.52					9.82	$19.90		
		14.86	$39.47					13.67	$27.83		
		14.03	$37.55					13.53	$28.09		
		13.29	$36.63					12.22	$26.28		
		13.19	$36.62				March	13.12	$28.82		
	May	13.10	$34.56					5.75	$12.45		
		14.29	$37.98					15.20	$34.77		
	June	13.56	$33.00				April	10.50	$28.32		
		8.13	$20.58					14.05	$37.89		
		13.59	$36.77					11.22	$28.61		
	July	15.05	$38.10					13.66	$37.70		
		12.71	$34.28					12.28	$33.76		
		12.50	$33.71					11.96	$31.05		
		13.98	$37.67					12.83	$34.90		
	August	13.58	$38.61					14.17	$38.20		
		15.50	$46.41					12.07	$32.53		
		14.34	$40.78				May	12.49	$34.79		
		14.00	$40.56					11.61	$32.51		
		12.41	$34.59					13.24	$37.60		
		13.51	$33.71					12.60	$35.96		
		14.67	$34.64					12.46	$34.90		
	September	14.57	$33.74					12.92	$35.60		
		14.10	$27.64					10.45	$29.10		
	October	12.50	$25.19					14.69	$40.21		
		11.00	$22.16				June	13.64	$36.58		
		12.42	$24.66				July	15.96	$43.13		
		10.01	$19.86					15.22	$41.92		
		8.76	$17.39				August	11.63	$31.81		
	November	10.75	$21.98					15.44	$38.92		
		9.61	$19.64					14.62	$35.22		
		15.92	$31.73				September	0.00	0.00		
		10.83	$22.43				October	12.47	$31.91		
		13.64	$28.24					14.24	$36.44		
	December	13.49	$27.90		116485			13.30	$34.04		
Totals		608.56	$1,469.89					13.86	$35.47		
							November	14.65	$38.34		
Avg. Cost/Gallon		$2.42						10.14	$33.14		
Mileage		11,953						16.67	$47.50		
MPG		19.6						12.50	$36.15		
							December	15.10	$40.68		
								14.83	$39.97		
								14.99	$41.87		130098
						Totals		707.43	$1,741.70		
						Avg. Cost/Gallon		$2.46			
						Mileage		13,613			
						MPG		19.2			
Summary											
Average Gal/Year		657.99									
Average Miles/Year		12,783									
MPG		19.4									
Average Cost/Year		$1,605.80									

FIELD CREW'S FUEL				
YEAR	MONTH	GALLONS	COST	$/GALLON
2006	January	511.62	$1,104.15	$2.16
2006	February	669.08	$1,370.56	$2.05
2006	March	706.86	$1,549.96	$2.19
2006	April	678.09	$1,720.26	$2.54
2006	May	628.42	$1,637.28	$2.61
2006	June	695.06	$1,783.92	$2.57
2006	July	603.48	$1,635.84	$2.71
2006	August	565.76	$1,579.74	$2.79
2006	September	660.09	$1,425.54	$2.16
2006	October	646.72	$1,335.22	$2.06
2006	November	559.66	$1,147.51	$2.05
2006	December	348.55	$738.94	$2.12
2007	January	564.76	$1,097.74	$1.94
2007	February	614.72	$1,221.27	$1.99
2007	March	744.03	$1,704.61	$2.29
2007	April	658.18	$1,671.51	$2.54
2007	May	662.55	$1,855.25	$2.80
2007	June	619.35	$1,670.59	$2.70
2007	July	707.24	$1,897.12	$2.68
2007	August	807.98	$1,992.84	$2.47
2007	September	479.00	$1,234.93	$2.58
2007	October	677.27	$1,737.87	$2.57
2007	November	451.93	$1,282.48	$2.84
2007	December	419.41	$1,139.41	$2.72
Average of Total		$2.42		
Average of 2006		$2.33		
Average of 2007		$2.51		
Total Gallons 2006		7273.39		
Total Gallons 2007		7406.42		

Appendix V

Real and Estimated Mileage and Fuel Costs

AVERAGED MILEAGE AND GALLONS FOR YEARS 2006-2007

LOCATION	AVERAGE YEARLY MILEAGE	AVERAGE MPG	AVERAGE GALLONS/YEAR	$/GALLON[a]	TOTAL COST
Existing 4 Crews					
Spartanburg	30,116	16.9	1,783.24	$2.00	$3,566.48
Newberry	29,886	16.0	1,876.70	$2.00	$3,753.40
Florence	29,431	15.7	1,870.20	$2.00	$3,740.40
Walterboro	29,715	15.4	1,931.02	$2.00	$3,862.04
Subtotal	119,148	16.0	7,461.16	$2.00	$14,922.32
Columbia (Coordinator)	12,783	19.4	657.99	$2.00	$1,315.98
Total	131,931	16.7	8,119.15	$2.00	$16,238.30

[a] Assumes gasoline will average $2.00/gallon in years 2008-2009.

ESTIMATED ANNUAL FUEL COST FOR RESTRUCTURED FIA PROGRAM

LOCATION	AVERAGE YEARLY MILEAGE (2006-2007)	AVERAGE YEARLY FUEL (GALLONS)	CALCULATED MILEAGE TO PLOTS (1 PANEL)a	MILEAGE EXPANSION FACTOR	CALCULATED YEARLY FUEL (GALLONS)	FUEL EXPANSION FACTOR	ESTIMATED YEARLY MILEAGE	ESTIMATED FUEL YEARLY FUEL QUANTITY	FUEL COST $2.00/GALLON	TOTAL @ $2.00/GALLON	FUEL COST $2.50/GALLON	TOTAL @ $2.50/GALLON
Restructured 3 Crews and Support												
Newberry	29,886	1,876.70	19,221	1.55	1,201.31	1.56	46,469	2,931.80	$2.00	$5,863.60	$2.50	$7,329.50
Florence	29,431	1,870.20	17,618	1.67	1,122.14	1.67	49,165	3,116.94	$2.00	$6,233.89	$2.50	$7,792.36
Walterboro	29,715	1,931.02	17,068	1.74	1,108.34	1.74	51,733	3,364.35	$2.00	$6,728.69	$2.50	$8,410.86
Subtotal	89,032	5,677.92	53,907	1.65	3,431.79	1.65	147,366	9,413.09	$2.00	$18,826.18	$2.50	$23,532.73
Columbia (Field Support)b							22,370	1,151.48	$2.00	$2,302.97	$2.50	$2,878.71
Columbia (Coordinator)	12,783	657.99							$2.00	$1,315.98	$2.50	$0.00
Total	**101,815**	**6,335.91**					**182,520**	**11,222.56**	**$2.00**	**$22,445.13**	**$2.50**	**$28,056.41**

a Calculated mileage was derived from Garmin® MapSource® mapping software for panel with the most field locations. Settings were set for shorter times and 60% of road selection to prefer highways.

b Columbia (Field Support) mileage and fuel was calculated taking Columbia (Coordinator) mileage and expanding by 75%.

Appendix VI

Budget – 4 Crews

FIA Budget 4 Crews From 1.1.09-12.31.09

Salary & Fringe

Position	Monthly Salary	Fringe	Number of Months	Subtotal 1	Salary Increases	Monthly Salary - Promotion	Fringe	Number of Months	Subtotal 2	COL 3%	Monthly Salary - COL	Fringe	Number of Months	Subtotal 3	Salary Increases	Monthly Salary - Promotion	Fringe	Number of Months	Subtotal 4	Total
Forester I	$ 2,600.75	35%	6	$ 21,066.08	0%	-	-	-	$ -	2%	$ 2,652.77	35%	6	$ 21,487.40						$ 42,553
Forester III	$ 2,866.25	35%	6	$ 23,216.63	0%	-	-	-	$ -	2%	$ 2,923.58	35%	6	$ 23,680.96						$ 46,898
Forest Tech II	$ 2,264.67	35%	6	$ 18,343.83	0%	-	-	-	$ -	2%	$ 2,309.96	35%	6	$ 18,710.79						$ 37,055
Forestry III	$ 2,866.25	35%	6	$ 23,216.63	0%	-	-	-	$ -	2%	$ 2,923.58	35%	6	$ 23,680.96						$ 46,898
Forester II	$ 2,678.75	35%	6	$ 21,697.88	0%	-	-	-	$ -	2%	$ 2,732.33	35%	4	$ 14,754.56	7%	$ 2,923.59	35%	2	$ 7,893.69	$ 44,346
Forester I	$ 2,600.75	35%	4.5	$ 15,799.56	3%	$ 2,678.77	35%	1.5	$ 5,424.51	2%	$ 2,652.77	35%	6	$ 21,487.40						$ 42,711
Forester I	$ 2,600.75	35%	6	$ 21,066.08	0%	-	-	-	$ -	2%	$ 2,652.77	35%	6	$ 21,487.40						$ 42,553
Forester II	$ 2,896.83	35%	1	$ 3,910.72	3%	$ 2,983.73	35%	5	$ 20,140.21	2%	$ 2,954.77	35%	6	$ 23,933.61						$ 47,985
Coordinator	$ 4,804.75	35%	6	$ 38,918.48	0%	-	-	-	$ -	2%	$ 4,900.85	35%	6	$ 39,696.84						$ 78,615
TOTAL SALARY																				$ 429,614
Average Monthly Salary & Fringe	$ 35,801.17																			

Operating

	Yearly	
Supplies		
Motor Vehicle Supplies	$ 6,000	
Ag., Main., & Other (Vins)	$ 5,500	
Office Supplies	$ 1,047	
Subtotal	$ 12,547	
Monthly	$ 1,045.58	
Contractual Supplies		
Motor Vehicle Repair	$ 7,000	
Freight	$ 1,500	
Telephones	$ 3,000	
Subtotal	$ 11,500	
Monthly	$ 958	
Insurance & Registration		
Vehicle Insurance($351/veh)	$ 1,755	
Boat Registration($30/boat)	$ 60	
Subtotal	$ 1,815	
Monthly	$ 151.25	
Travel		
In-State Meals	$ 2,675	Assumes crews travel 3 weeks/year and Coordinator travels 1 weeks/year.
In-State Lodging	$ 3,380	Assumes crews travel 3 weeks/year and Coordinator travels 1 weeks/year @ $65/night
In-State Mileage	$ 1,000	
Out of State Meals	$ 2,740	Assumes Coordinator travels 4 weeks/year & 4 crews 2 week/year
Out of State Lodging	$ 2,720	Assumes Coordinator travels 4 weeks/year & 4 crews 1 week/year @ $85/night
Out of State Airfare	$ 3,000	Assumes Coordinator takes 2 flights/year
Subtotal	$ 15,515	
Monthly	$ 1,292.92	
Equipment		
Field Equipment	$ 5,000	
Subtotal	$ 5,000	
Monthly	$ 417	
Gasoline		
Vehicles[1]	$ 16,238	Based on 676.58 gallons/month @ $2.00/gal.
Vehicles[2]	$ 20,298	Based on 676.58 gallons/month @ $2.50/gal.
Boat (gas & oil)	$ 500	
Subtotal[1]	$ 16,738	
Subtotal[2]	$ 20,798	
Monthly[1]	$ 1,394.83	
Monthly[2]	$ 1,733.17	
TOTAL OPERATING[1]	$ 63,115	
TOTAL OPERATING[2]	$ 67,175	
Monthly Operating[1]	$ 5,259.58	
Monthly Operating[2]	$ 5,597.92	
TOTAL BUDGET[1]	$ 492,729	
TOTAL BUDGET[2]	$ 496,789	
Total Monthly Budget[1]	$ 41,060.76	
Total Monthly Budget[2]	$ 41,399.09	

[1]Based on fuel costs of $2.00/gallon
[2]Based on fuel costs of $2.50/gallon

BUDGET BREAKDOWN OF FUNDS

Expenditure	State	Federal	Total
Salary	$ 123,977	$ 194,256	$ 318,233
Fringe	$ 43,392	$ 67,989	$ 111,381
Operating[1]	$ 33,977	$ 29,138	$ 63,115
Operating[2]	$ 38,037	$ 29,138	$ 67,175
Total[1]	$ 201,346	$ 291,383	$ 492,729
Total[2]	$ 205,406	$ 291,383	$ 496,789

[1]Based on fuel costs of $2.00/gallon

[2]Based on fuel costs of $2.50/gallon

FIA BUDGET - 75/25 BREAKDOWN

Expenditure	State	Federal	Total
Salary	$ 64,752	$ 194,256	$ 259,008
Fringe	$ 22,663	$ 67,989	$ 90,652
Operating	$ 9,713	$ 29,138	$ 38,851
Total	$ 97,128	$ 291,383	$ 388,511

Budget – 3 Crews

FIA Budget 3 Crews From 1.1.09-12.31.09

Salary & Fringe

Positions	Monthly Salary	Fringe	Number of Months	Subtotal 1	Salary Increases	Monthly Salary - Promotion	Fringe	Number of Months	Subtotal 2	COL 5%	Monthly Salary - COL	Fringe	Number of Months	Subtotal 3	Salary Increases	Monthly Salary - Promotion	Fringe	Number of Months	Subtotal 4	Total
Forester III	$ 2,866.25	35%	6	$ 23,216.63	0%	-	-	-	$ -	2%	$ 2,923.58	35%	6	$ 23,680.96						$ 46,898
Forest Tech II	$ 2,264.67	35%	6	$ 18,343.83	0%	-	-	-	$ -	2%	$ 2,309.96	35%	6	$ 18,710.70						$ 37,055
Forester II	$ 2,678.75	35%	6	$ 21,697.88	0%	-	-	-	$ -	2%	$ 2,732.33	35%	4	$ 14,754.56	7%	$ 2,923.59	35%	2	$ 7,893.69	$ 44,346
Forester I	$ 2,600.75	35%	4.5	$ 15,799.56	3%	$ 2,678.77	35%	1.5	$ 5,424.51	2%	$ 2,652.77	35%	6	$ 21,487.40						$ 42,711
Forester III	$ 2,866.25	35%	6	$ 23,216.63	0%	-	-	-	$ -	2%	$ 2,923.58	35%	6	$ 23,680.96						$ 46,898
Forester II	$ 2,896.83	35%	1	$ 3,910.72	3%	$ 2,983.73	35%	5	$ 20,140.23	2%	$ 2,954.77	35%	6	$ 23,933.61						$ 47,985
Coordinator	$ 4,804.75	35%	6	$ 38,918.48	0%	-	-	-	$ -	2%	$ 4,900.85	35%	6	$ 39,696.84						$ 78,615
TOTAL SALARY																				$ 344,507

Average Monthly Salary & Fringe	$ 28,708.93

Operating

	Yearly	
Supplies		
Motor Vehicle Supplies	$ 6,000	
Ag., Main., & Other (Vrs)	$ 5,500	
Office Supplies	$ 1,047	
Subtotal	$ 12,547	
Monthly	$ 1,045.58	
Contractual Supplies		
Motor Vehicle Repair	$ 7,000	
Freight	$ 1,500	
Telephone	$ 3,000	
Subtotal	$ 11,500	
Monthly	$ 958	
Insurance & Registration		
Vehicle Insurance($351/veh)	$ 1,755	
Boat Registration($30/boat)	$ 60	
Subtotal	$ 1,815	
Monthly	$ 151.25	
Travel		
In-State Meals	$ 3,317	Assumes crews travel 5 weeks/year and Coordinator travels 1 week/year.
In-State Lodging	$ 4,160	Assumes crews travel 5 weeks/year and Coordinator travels 1 week/year @ $65/night.
In-State Mileage	$ 1,000	
Out of State Meals	$ 2,192	Assumes Coordinator travels 4 weeks/year & crews 2 week/year.
Out of State Lodging	$ 3,400	Assumes Coordinator travels 4 weeks/year & crews 2 week/year @ $85/night.
Out of State Airfare	$ 3,000	Assumes Coordinator takes 2 flights/year.
Subtotal	$ 17,069	
Monthly	$ 1,422.42	
Equipment		
Field Equipment	$ 5,000	
Subtotal	$ 5,000	
Monthly	$ 417	
Gasoline		
Vehicles[1]	$ 20,142	Estimated based on analysis
Vehicles[2]	$ 25,178	Estimated based on analysis
Boat (gas & oil)	$ 500	
Subtotal[1]	$ 20,642	
Subtotal[2]	$ 25,678	
Monthly[1]	$ 1,720.17	
Monthly[2]	$ 2,139.83	
TOTAL OPERATING[1]	68,573	
TOTAL OPERATING[2]	73,609	
Monthly Operating[1]	5,714.42	
Monthly Operating[2]	6,134.08	
TOTAL BUDGET[1]	413,080	
TOTAL BUDGET[2]	418,116	
Total Monthly Budget[1]	$ 34,423.34	
Total Monthly Budget[2]	$ 34,843.01	

[1]Based on fuel costs of $2.00/gallon

[2]Based on fuel costs of $2.50/gallon

BUDGET BREAKDOWN OF FUNDS

Expenditure	State	Federal	Total
Salary	$ 60,935	$ 194,256	$ 255,191
Fringe	$ 21,327	$ 67,989	$ 89,316
Operating[1]	$ 39,435	$ 29,138	$ 68,573
Operating[2]	$ 44,471	$ 29,138	$ 73,609
Total[1]	$ 121,697	$ 291,383	$ 413,080
Total[2]	$ 126,733	$ 291,383	$ 418,116

[1]Based on fuel costs of $2.00/gallon

[2]Based on fuel costs of $2.50/gallon

FIA BUDGET - 75/25 BREAKDOWN

Expenditure	State	Federal	Total
Salary	$ 64,752	$ 194,256	$ 259,008
Fringe	$ 22,663	$ 67,989	$ 90,652
Operating	$ 9,713	$ 29,138	$ 38,851
Total	$ 97,128	$ 291,383	$ 388,511

Budget – 3 Crews and Field Support Position

FIA Budget 3 Crews and Field Support Position From 1.1.09-12.31

Salary & Fringe

Position	Monthly Salary	Fringe	Number of Months	Subtotal 1	Salary Increases	Monthly Salary - Promotion	Fringe	Number of Months	Subtotal 2	COL 3%	Monthly Salary - COL	Fringe	Number of Months	Subtotal 3	Salary Increases	Monthly Salary - Promotion	Fringe	Number of Months	Subtotal 4	Total
Forester III	$ 2,866.25	35%	6	$ 23,216.63	0%	-	-	-	$ -	2%	$ 2,923.58	35%	6	$ 23,680.96						$ 46,898
Forester III	$ 2,866.25	35%	6	$ 23,216.63	0%	-	-	-	$ -	2%	$ 2,923.58	35%	6	$ 23,680.96						$ 46,898
Forester II	$ 2,678.75	35%	6	$ 21,697.88	0%	-	-	-	$ -	2%	$ 2,732.33	35%	4	$ 14,754.56	7%	$ 2,923.59	35%	2	$ 7,893.69	$ 44,346
Forester I	$ 2,600.75	35%	4.5	$ 15,799.56	3%	$ 2,678.77	35%	1.5	$ 5,434.51	2%	$ 2,652.77	35%	6	$ 21,487.46						$ 42,721
Forester II	$ 2,812.67	35%	5	$ 18,985.52	7%	$ 3,009.56	35%	1	$ 4,062.90	2%	$ 3,069.75	35%	6	$ 24,864.96						$ 47,913
Forester II	$ 2,896.83	35%	1	$ 3,910.72	3%	$ 2,983.73	35%	5	$ 20,140.21	2%	$ 2,954.77	35%	6	$ 23,933.61						$ 47,985
Field Support	$ 3,333.33	35%	6	$ 26,999.97	0%	-	-	-	$ -	2%	$ 3,400.00	35%	6	$ 27,539.97						$ 54,540
Coordinator	$ 4,804.75	35%	6	$ 38,918.48	0%	-	-	-	$ -	2%	$ 4,900.85	35%	6	$ 39,696.84						$ 78,615
TOTAL SALARY																				$ 409,906
Average Monthly Salary & Fringe	$ 34,158.83																			

Operating

	Yearly	
Supplies		
Motor Vehicle Supplies	$ 6,000	
Ag., Main., & Other (Vics)	$ 5,500	
Office Supplies	$ 1,047	
Subtotal	$ 12,547	
Monthly	$ 1,045.58	
Contractual Supplies		
Motor Vehicle Repair	$ 7,000	
Freight	$ 1,500	
Telephone	$ 3,000	
Subtotal	$ 11,500	
Monthly	$ 958	
Insurance & Registration		
Vehicle Insurance($351/veh)	$ 1,755	
Boat Registration($30/boat)	$ 60	
Subtotal	$ 1,815	
Monthly	$ 151.25	
Travel		
In-State Meals	$ 3,163	Assumes crews & Field Support travel 4 weeks/year and Coordinator travels 1 weeks/year.
In-State Lodging	$ 4,420	Assumes crews & Field Support travel 4 weeks/year and Coordinator travels 1 weeks/year @ $65/night.
In-State Mileage	$ 1,000	
Out of State Meals	$ 2,466	Assumes Coordinator travels 4 weeks/year & crews & Field Support 2 week/year.
Out of State Lodging	$ 4,080	Assumes Coordinator travels 4 weeks/year & crews & Field Support 2 week/year @ $85/night.
Out of State Airfare	$ 3,000	Assumes Coordinator takes 2 flights/year.
Subtotal	$ 18,069	
Monthly	$ 1,505.75	
Equipment		
Field Equipment	$ 5,000	
Subtotal	$ 5,000	
Monthly	$ 417	
Gasoline		
Vehicles[1]	$ 22,445	Estimated based on analysis
Vehicles[2]	$ 28,056	Estimated based on analysis
Boat (gas & oil)	$ 500	
Subtotal[1]	$ 22,945	
Subtotal[2]	$ 28,556	
Monthly[1]	$ 1,912.08	
Monthly[2]	$ 2,379.67	
TOTAL OPERATING[1]	$ 71,876	
TOTAL OPERATING[2]	$ 77,487	
Monthly Operating[1]	$ 5,989.67	
Monthly Operating[2]	$ 6,457.25	
TOTAL BUDGET[1]	$ 481,782	
TOTAL BUDGET[2]	$ 487,393	
Total Monthly Budget[1]	$ 40,148.49	
Total Monthly Budget[2]	$ 40,616.08	

[1]Based on fuel costs of $2.00/gallon
[2]Based on fuel costs of $2.50/gallon

BUDGET BREAKDOWN OF FUNDS

Expenditure	State	Federal	Total
Salary	$ 109,379	$ 194,256	$ 303,635
Fringe	$ 38,282	$ 67,989	$ 106,271
Operating[1]	$ 42,738	$ 29,138	$ 71,876
Operating[2]	$ 48,349	$ 29,138	$ 77,487
Total[1]	$ 190,399	$ 291,383	$ 481,782
Total[2]	$ 196,010	$ 291,383	$ 487,393

[1]Based on fuel costs of $2.00/gallon

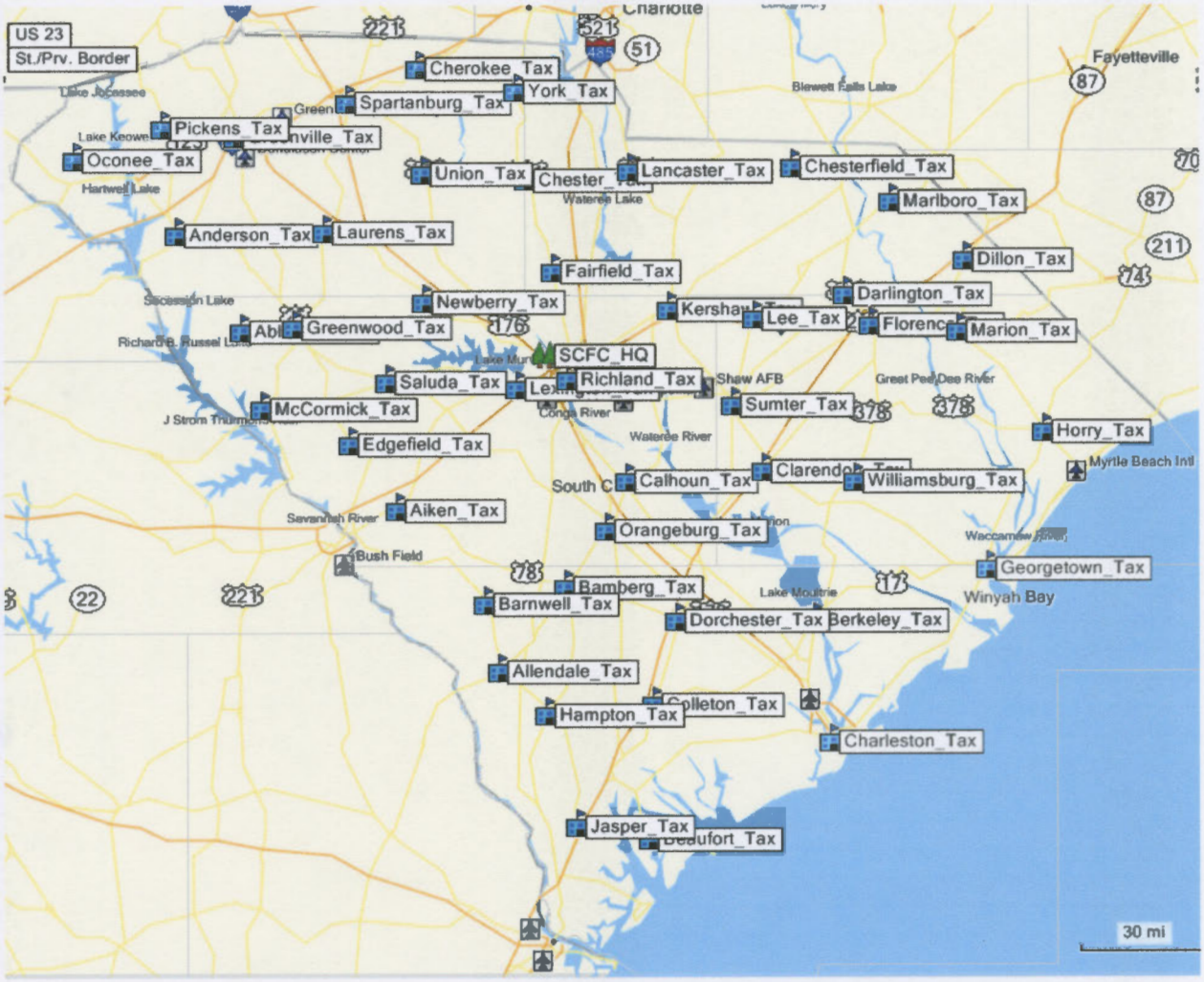
[2]Based on fuel costs of $2.50/gallon

FIA BUDGET - 75/25 BREAKDOWN

Expenditure	State	Federal	Total
Salary	$ 64,752	$ 194,256	$ 259,008
Fringe	$ 22,663	$ 67,989	$ 90,652
Operating	$ 9,713	$ 29,138	$ 38,851
Total	$ 97,128	$ 291,383	$ 388,511

Appendix VII

Mileage to Collect Ownership Data by Field Support Position



Mileage To Collect FIA Ownership Data	
Destination Tax Office (From SCFC HQ)	**Mileage (Round Trip)**
Union and Cherokee	186
Saluda and McCormick	164
Edgefield and Aiken	153
Laurens and Newberry	141
Chester and Lancaster	189
Kershaw and Lee	128
Chesterfield and Marlboro	246
Darlington and Florence	187
Dillon, Marion, and Horry	323
Clarendon and Williamsburg	241
Sumter and Calhoun	153
Colleton and Jasper	275
Bamberg and Hampton	209
Allendale and Barnwell	205
Total	**2800**
Miles/Gallon	**Cost of Fuel @** $2.00/Gallon
17	$329.41

Appendix VIII

Lost Work Days

			Days Per Week										
Employee & Date (Week Ending)	Forest Partial Plots	NF Plots	FIA Work Days	Training	Ownership	Check Cruise	Lost Plots	Weather	Other	Annual Leave	Sick Leave	Holiday Leave	Total
Employee 198 1/8/07-1/11/08													
1/12/2007	2		3						2				5
1/19/2007	1	3	4									1	5
1/26/2007	1	3	3			1			1				5
2/2/2007	2		4.5					0.5					5
2/9/2007	3		5										5
2/16/2007	4		4							1			5
2/23/2007	2		4							1			5
3/2/2007	3		5										5
3/9/2007			3	1					1				5
3/16/2007	1		2	2					1				5
3/23/2007	2		4						1				5
3/30/2007	1	3	5										5
4/6/2007	2		3	1					1				5
4/13/2007	1	2	4	1									5
4/20/2007		2	5										5
4/27/2007	1		3						1		1		5
5/4/2007	2		4		1								5
5/11/2007										4		1	5
5/18/2007	1		5										5
5/25/2007	2		4	1									5
6/1/2007	2		4									1	5
6/8/2007	1		1	4									5
6/15/2007	2		4		1								5
6/22/2007	2	1	4.5		0.5								5
6/29/2007	4		5										5
7/6/2007	1		3						1			1	5
7/13/2007	3		5										5
7/20/2007	2		4	1									5
7/27/2007			1	3		1							5
8/3/2007									5				5
8/10/2007									5				5
8/17/2007	2		4						1				5
8/24/2007	3		5										5
8/31/2007	1		4		1								5
9/7/2007	1		3			1						1	5
9/14/2007	2		4						1				5
9/21/2007	1		3		1				1				5
9/28/2007	2		4						1				5
10/5/2007									3	2			5
10/12/2007	2		4						1				5
10/19/2007	2		4				1						5
10/26/2007	1		5										5
11/2/2007	2		3			1			1				5
11/9/2007	2		5										5
11/16/2007	3		3.5						0.5			1	5
11/23/2007	1		3									2	5
11/30/2007											5		5
12/7/2007											5		5
12/14/2007			3								2		5
1/11/2008	1		1		2				2				5
Total	74	14	164.5	14	6.5	4	1	0.5	30.5	8	13	8	250

			Days Per Week										
Employee & Date (Week Ending)	Forest/Partial Plots	NF Plots	FIA Work Days	Training	Ownership	Check Cruise	Lost Plots	Weather	Other	Annual Leave	Sick Leave	Holiday Leave	Total
Employee 415 1/8/07-1/11/08													
1/12/2007	1		2.5		0.5				2				5
1/19/2007	2		4									1	5
1/26/2007	1		3						2				5
2/2/2007	1		3	1				0.5	0.5				5
2/9/2007									5				5
2/16/2007									5				5
2/23/2007	2	1	4									1	5
3/2/2007	1	1	5										5
3/9/2007	1		3	1					1				5
3/16/2007	1		1.5	2	0.5				1				5
3/23/2007	2		4						1				5
3/30/2007	2		5										5
4/6/2007	1		3.5	0.5					1				5
4/13/2007	2	1	4	1									5
4/20/2007									5				5
4/27/2007									5				5
5/4/2007									5				5
5/11/2007	2		4									1	5
5/18/2007	1		2	3									5
5/25/2007	2		4	1									5
6/1/2007	2		4									1	5
6/8/2007			1	4									5
6/15/2007	2		4		1								5
6/22/2007	1		1	4									5
6/29/2007	2		3						1	1			5
7/6/2007	2		3						1	1			5
7/13/2007	3	1	5										5
7/20/2007	2		4	1									5
7/27/2007	1		1	3		1							5
8/3/2007				5									5
8/10/2007									5				5
8/17/2007	2		4						1				5
8/24/2007	1	3	5										5
8/31/2007	3		4			1							5
9/7/2007	2		3							1		1	5
9/14/2007	1	2	4						1				5
9/21/2007		3	2						1	2			5
9/28/2007	2		4	1									5
10/5/2007	1	2	2						3				5
10/12/2007	2		4								1		5
10/19/2007	2		4				1						5
10/26/2007	1	1	4.5						0.5				5
11/2/2007	1		3			1					1		5
11/9/2007	3		5										5
11/16/2007	1		4									1	5
11/23/2007	1		2							1		2	5
11/30/2007	2	1	5										5
12/7/2007	2		5										5
12/14/2007	1		5										5
1/11/2008			1	2	2								5
Total	65	16	149	29.5	4	3	1	0.5	47	6	2	8	250

			Days Per Week										
Employee & Date (Week Ending)	Forest/Partial Plots	NF Plots	FIA Work Days	Training	Ownership	Check Cruise	Lost Plots	Weather	Other	Annual Leave	Sick Leave	Holiday Leave	Total
Employee 403 1/8/07-1/11/08													
1/12/2007	1		1		1				1	2			5
1/19/2007	3	2	3					1	1				5
1/26/2007	1	1	3	1		1							5
2/2/2007		3	1.5					1.5	2				5
2/9/2007	2		4	1									5
2/16/2007	1	1	2.5		0.5				2				5
2/23/2007	1	3	3								1	1	5
3/2/2007	2	3	4			1							5
3/9/2007	2		4	0.5					0.5				5
3/16/2007	2	3	4.5		0.5								5
3/23/2007	1		1.5		0.5	1			1	1			5
3/30/2007	2		5										5
4/6/2007	1	2	4	0.5	0.5								5
4/13/2007			3			1				1			5
4/20/2007	2		5										5
4/27/2007	1	1	4.5						0.5				5
5/4/2007	2	1	4		1								5
5/11/2007										4		1	5
5/18/2007	2	2	4							1			5
5/25/2007	1	7	4.5						0.5				5
6/1/2007	2		4									1	5
6/8/2007			1	4									5
6/15/2007	3		5										5
6/22/2007				4						1			5
6/29/2007	2		4		0.5				0.5				5
7/6/2007			1			1				2		1	5
7/13/2007	3		5										5
7/20/2007	3	1	4						1				5
7/27/2007	1		2.5	2					0.5				5
8/3/2007				4					1				5
8/10/2007	1	1	1						4				5
8/17/2007	2		5										5
8/24/2007	2	1	4.5						0.5				5
8/31/2007	2		3			1					1		5
9/7/2007	1		2			1				1		1	5
9/14/2007	2		4		0.5				0.5				5
9/21/2007	1		3						2				5
9/28/2007	2		3						2				5
10/5/2007									5				5
10/12/2007	2		5										5
10/19/2007	3	1	3			1			1				5
10/26/2007	1		3						1		1		5
11/2/2007	2		4								1		5
11/9/2007	5	3	5										5
11/16/2007		1	3.5						0.5			1	5
11/23/2007										3		2	5
11/30/2007	3	1	4						1				5
12/7/2007	3		4						1				5
12/14/2007	2		4						1				5
1/11/2008			1	1					3				5
Total	75	38	154.5	18	5	8	0	2.5	34	16	4	8	250

			Days Per Week										
Employee & Date (Week Ending)	**Forest Partial Plots**	**NF Plots**	**FIA Work Days**	**Training**	**Ownership**	**Check Cruise**	**Lost Plots**	**Weather**	**Other**	**Annual Leave**	**Sick Leave**	**Holiday Leave**	**Total**
Employee 444 4/23/07-4/25/08													
4/27/2007	2		5										5
5/4/2007	1	1	4		0.5				0.5				5
5/11/2007	2		4									1	5
5/18/2007	1	2	5										5
5/25/2007	1	2	3	2									5
6/1/2007	2		4									1	5
6/8/2007	1		1	4									5
6/15/2007	2		5										5
6/22/2007	1		4		1								5
6/29/2007	2		4		0.5				0.5				5
7/6/2007	1		3			1						1	5
7/13/2007	2		5										5
7/20/2007	2	1	4						1				5
7/27/2007	1	1	3	2									5
8/3/2007									5				5
8/10/2007		2	1						4				5
8/17/2007	3		5										5
8/24/2007	2		4						1				5
8/31/2007	1		3			1					1		5
9/7/2007	1		2			2						1	5
9/14/2007	2		4		0.5				0.5				5
9/21/2007	2		3		1				1				5
9/28/2007	1	3	4						1				5
10/5/2007									5				5
10/12/2007	2	1	4.5						0.5				5
10/19/2007	2		3			1			1				5
10/26/2007	2	2	5										5
11/2/2007	2	1	5										5
11/9/2007				5									5
11/16/2007	2		2	1					1			1	5
11/23/2007	2		5										5
11/30/2007	3		4						1				5
12/7/2007	2		4						1				5
12/14/2007	3		4						1				5
1/11/2008	1		1	1	1.5				1.5				5
1/18/2008	2		4					1					5
1/25/2008	2		4									1	5
2/1/2008	2		4						1				5
2/8/2008	2		4			1							5
2/15/2008	2		5										5
2/22/2008			1						3			1	5
2/29/2008	2		3	1				1					5
3/7/2008	1		2.5					1	1		0.5		5
3/14/2008									5				5
3/21/2008									5				5
3/28/2008	1		5										5
4/4/2008		1	5										5
4/11/2008									5				5
4/18/2008									5				5
4/25/2008	3		5										5
Total	71	17	160	16	5	6	0	3	51.5	0	1.5	7	250

			Days Per Week										
Employee & Date (Week Ending)	Forest/Partial Plots	NF Plots	FIA Work Days	Training	Ownership	Check Cruise	Lost Plots	Weather	Other	Annual Leave	Sick Leave	Holiday Leave	Total
Employee 449 5/21/07-5/23/08													
5/25/2007	1		3								2		5
6/1/2007			2							2		1	5
6/8/2007			0.5	4	0.5								5
6/15/2007	1	2	4		1								5
6/22/2007	4	1	4				1						5
6/29/2007	1	5	4		0.5				0.5				5
7/6/2007	1		1		2						1	1	5
7/13/2007	2		3						2				5
7/20/2007	4		4		1								5
7/27/2007		2	2	2							1		5
8/3/2007	3		3			1			1				5
8/10/2007		3	1						3	1			5
8/17/2007	4	2	5										5
8/24/2007	2		2								3		5
8/31/2007	4		4						1				5
9/7/2007	3		3.5				0.5					1	5
9/14/2007	3		4			1							5
9/21/2007	4		5										5
9/28/2007	1		3						2				5
10/5/2007					1				4				5
10/12/2007	3		5										5
10/19/2007										5			5
10/26/2007	3	1	4			1							5
11/2/2007	2		4		0.5		0.5						5
11/9/2007				5									5
11/16/2007	2		2	1							1	1	5
11/23/2007	1		3									2	5
11/30/2007	3		5										5
12/7/2007	1		4				0.5		0.5				5
12/14/2007	4		5										5
12/21/2007	1		3						2				5
1/11/2008	1		2		1				1	1			5
1/18/2008	2		4		1								5
1/25/2008	2		4									1	5
2/1/2008	3		5										5
2/8/2008	1	1	3			1	1						5
2/15/2008	2	1	5										5
2/22/2008			3					1				1	5
2/29/2008	3		5										5
3/7/2008	1	1	3	1	1								5
3/14/2008									5				5
3/21/2008									5				5
3/28/2008									5				5
4/4/2008									4	1			5
4/11/2008									5				5
4/18/2008									5				5
4/25/2008									5				5
5/2/2008	1		5										5
5/16/2008	1		3							2			5
5/23/2008		2	2	3									5
Total	75	21	137	16	9.5	4	3.5	1	51	12	8	8	250

			Days Per Week										
Employee & Date (Week Ending)	**Forest Partial Plots**	**NF Plots**	**FIA Work Days**	**Training**	**Ownership**	**Check Cruise**	**Lost Plots**	**Weather**	**Other**	**Annual Leave**	**Sick Leave**	**Holiday Leave**	**Total**
Employee 462 8/27/07-8/29/08													
8/31/2007	2	5	5										5
9/7/2007		2	2			1	1					1	5
9/14/2007	2		5										5
9/21/2007	1	3	4		0.5			0.5					5
9/28/2007	1		3						1		1		5
10/5/2007									5				5
10/12/2007			4								1		5
10/19/2007	4		4.5						0.5				5
11/2/2007										5			5
11/9/2007				5									5
11/16/2007	1		3.5		0.5							1	5
11/23/2007	1		3									2	5
11/30/2007	5		5										5
12/7/2007	3		5										5
12/14/2007				5									5
12/21/2007	2	1	5										5
1/11/2008	2		3	1	0.5			0.5					5
1/18/2008	4		4					1					5
1/25/2008	1		4									1	5
2/1/2008			5										5
2/8/2008	3		4		0.5				0.5				5
2/15/2008	3		3						2				5
2/22/2008	1		3			1						1	5
2/29/2008	1		2	1		1					1		5
3/7/2008	1		4		0.5				0.5				5
3/14/2008	1		2	3									5
3/21/2008	1		5										5
3/28/2008			2		0.5	1			0.5	1			5
4/4/2008	3		5										5
4/11/2008	2		5										5
4/18/2008	1		3			0.5			1.5				5
4/25/2008	2		3						2				5
5/1/2008	1	2	3						1		1		5
5/9/2008	1		3						1			1	5
5/16/2008	1		2		1	1			1				5
5/23/2008	1		2	3									5
5/30/2008	1		3						1			1	5
6/6/2008			1	4									5
6/13/2008	2		4		1								5
6/20/2008	2	1	5										5
6/27/2008	1		3						2				5
7/4/2008	1		3								1	1	5
7/11/2008	2		5										5
7/18/2008	2		5										5
7/25/2008	1		1	3					1				5
8/1/2008				4							1		5
8/8/2008	2		3						2				5
8/15/2008	3		5										5
8/22/2008			3		1	1							5
8/29/2008	2		4				1						5
Total	71	14	161	29	6	6.5	2	2	22.5	6	6	9	250

Appendix IX

Certification of Employees

Certification of SCFC Employees							
Employee Number	Hire Date	Certification Date	Number of Days	Holidays	Net Days	Number of Weeks	Number of Months
131	7/19/1999	1/5/2000	123	7	116	24.6	5.7
130	7/19/1999	1/5/2000	123	7	116	24.6	5.7
129	8/23/1999	1/5/2000	98	7	91	19.6	4.5
127	11/22/1999	1/5/2000	33	5	28	6.6	1.5
128	2/7/2000	4/29/2000	60	1	59	12.0	2.8
170	7/31/2000	12/19/2000	102	5	97	20.4	4.7
191	12/10/2000	3/7/2001	63	4	59	12.6	2.9
192	12/18/2000	3/7/2001	58	4	54	11.6	2.7
198	1/22/2001	4/11/2001	58	1	57	11.6	2.7
202	4/9/2001	6/27/2001	58	2	56	11.6	2.7
340	10/1/2003	1/8/2004	72	7	65	14.4	3.3
341	10/20/2003	3/1/2004	96	9	87	19.2	4.4
369	6/7/2004	8/26/2004	59	1	58	11.8	2.7
370	6/17/2004	8/26/2004	51	1	50	10.2	2.4
393	5/23/2005	9/8/2005	79	3	76	15.8	3.6
403	8/29/2005	1/27/2006	110	9	101	22.0	5.1
415	3/13/2006	6/1/2006	59	1	58	11.8	2.7
435	9/1/2006	3/9/2007	136	10	126	27.2	6.3
444	10/9/2006	4/19/2007	139	9	130	27.8	6.4
449	1/9/2007	5/17/2007	93	3	90	18.6	4.3
462	6/4/2007	8/23/2007	59	1	58	11.8	2.7
465	8/17/2007	11/15/2007	65	2	63	13.0	3.0
474	1/7/2008	4/25/2008	80	2	78	16.0	3.7
484	4/18/2008	10/23/2008	135	4	131	27.0	6.2
Expected						12	2.8
Average			81.5		79.3	16.7	3.9
	Weeks	Months					
Mean	16.7	3.9					
Median	15.1	3.5					
Mode	11.6	2.7					
Note: Does not include first employees, two temporary employees, and two employees who had prior experience in the program.							

Certification of Federal Employees							
Employee Number	**Hire Date**	**Certification Date**	**Number of Days**	**Holidays**	**Net Days**	**Number of Weeks**	**Number of Months**
1	5/10/1998	11/24/1998	142	5	137	28.4	6.6
2	5/24/1998	9/1/1998	72	2	70	14.4	3.3
3	10/24/1999	6/1/2000	159	7	152	31.8	7.3
4	3/15/2000	9/14/2000	132	3	129	26.4	6.1
5	11/5/2000	7/19/2001	184	8	176	36.8	8.5
6	6/1/2001	8/15/2001	54	1	53	10.8	2.5
7	1/13/2002	9/15/2002	175	5	170	35.0	8.1
8	6/16/2002	9/28/2002	75	2	73	15.0	3.5
9	9/15/2002	2/14/2003	110	6	104	22.0	5.1
10	1/10/2003	4/17/2003	70	2	68	14.0	3.2
11	1/10/2003	4/17/2003	70	2	68	14.0	3.2
12	1/10/2003	5/20/2003	93	2	91	18.6	4.3
13	2/5/2003	5/20/2003	75	1	74	15.0	3.5
14	9/1/2003	12/18/2003	79	4	75	15.8	3.6
15	10/15/2003	1/9/2004	63	5	58	12.6	2.9
16	12/23/2003	3/24/2004	67	4	63	13.4	3.1
17	12/23/2003	3/24/2004	67	4	63	13.4	3.1
18	8/1/2005	1/6/2006	115	6	109	23.0	5.3
19	9/15/2005	4/20/2006	156	7	149	31.2	7.2
20	1/11/2006	7/20/2006	137	4	133	27.4	6.3
21	10/1/2006	2/5/2007	91	5	86	18.2	4.2
22	10/1/2006	2/5/2007	91	5	86	18.2	4.2
23	10/1/2006	2/5/2007	91	5	86	18.2	4.2
Expected						12	2.8
Average			103.0		98.8	20.6	4.8
	Weeks	**Months**					
Mean	20.6	4.8					
Median	18.2	4.2					
Mode	18.2	4.2					